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THE
VETERINARIAN;

A

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FOR 1859.

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EDITED BY
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JANUARY, 1859.

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No. 49.

Communications and Cases.

ON THE ARTIFICIAL PRODUCTION OF ORGANIC
COMPOUNDS.

It is universally acknowledged that this is an age of progress. Great and marvellous are the truths that from time to time burst upon the mind in its investigations of the wonders that surround us in nature; and the principles therein involved being made obvious, and then transferred to art, render this also a *practical* age. Nor do we content ourselves with present discoveries, but the past are likewise called into requisition by us, and, being applied, are also rendered useful; by which means mankind is benefited as a whole, either by "lessening the many ills that flesh is heir to," or contributing to the comforts or the necessaries of life.

Professor Owen, in the fine address which he gave at the opening of the late meeting of the British Association for the Advancement of Science, extracts from which appeared in a recent number of our Journal, referring to the progress of chemistry, says: "The present tendency of the higher generalization of chemistry seems to be towards a reduction of the number of those bodies which are called elementary. It begins to be suspected that certain groups of these so-called chemical elements are but modified forms one of another—allotropic forms of some one element." Dumas first broached this subject, and some persons thought, by his statement, that he favored the idea of the transmutation of bodies; he, however, referred only to those substances which, possessing a relationship to each other, rendered such a change probable, and even possible. In these triad groups,—so designated by this philosopher—it has been observed, that the *intermediate* body has most of its properties the intermediate of those of the two extremes. Take, as illus-

trative of this, three substances of volcanic origin, with their combining numbers :

Sulphur, 16; selenium, 40; tellurium, 64.

The half of the two extreme bodies gives the number of the intermediate one.

So, if we take three substances met with in the waters of the ocean :

Chlorine, 35; bromine, 80; iodine, 125.

Here, again, the half of the numbers of the two extremes gives that of the intermediate substance. Their origin being the same, their properties similar, and the combining number being thus found, all seem to favour the idea that the middle elementary body may be a modified form of one of the others. Strange as it may appear, it is nevertheless a fact, that the number of the so-called chemical elements of late years has increased, instead of diminished.

We have now to do with some of these elements as they exist in organic bodies. A few years since it was thought that the different compounds met with in a plant or animal could only be produced by the influence of that inscrutable principle termed life; that by combinations, far too recondite for the chemist to understand or imitate, the proximate principles found in the one or the other were alone formed. At the present day other views are entertained, since some of them may be made in the laboratory.

The first organic principle artificially obtained was UREA. This was done by Wöhler in 1828, who procured it by the application of heat to a solution of the cyanate of ammonia.* Anhydrous and crystallized urea contains



which are the elements of the cyanate of the oxide of ammonium.

To this followed the formation of acetic acid, and the production of methyl from it by Kolbe. Since then, the constitution of most of the organic radicals having been ascertained, their preparation has been attempted, and in many instances success has resulted. "The labours of the last twelve years," says Fownes, "have brought to light a very numerous group of substances, perfectly analogous to

* Liebig's process consists in dissolving cyanate of potassa in water, and adding to it an equal weight of neutral sulphate of ammonia, then evaporating to dryness. The residuum being boiled in alcohol, it takes up the urea, leaving the sulphate of potassa and ammonia. The alcoholic solution, by evaporation, furnishes urea in the form of crystals.

the alkaloids which are found in plants, but produced by artificial processes in the laboratory. These bodies, which are termed *artificial alkaloids*, or *artificial organic bases*, are mostly volatile. Their constitution is much simpler than that of the native bases; the very processes which give rise to their formation often permit a very clear insight into the mode in which the elements are grouped, and in the relation existing between these substances and ammonia."

Berzelius assumed that all the alkaloids contain ammonia ready formed, and that their basic properties are due to it; an opinion, it appears, not universally adopted, from its being unsupported by sufficient experimental evidence, although some of the alkaloids are constituted as represented by the theory of Berzelius, but many others are not.

It need scarcely be said that, if chemistry continues thus to progress, the barrier that once divided the organic from the inorganic kingdom of nature will be broken down; and should it be that simpler means are devised, it will be more economical to resort to the artificial production of compounds, than to wait for their formation by the vital functions, for time is an important element, both in science and in commerce. It is true that the constitution of many of these "radicals" may not be yet clearly understood, and the means resorted to for their artificial formation may bear little or no analogy to the method nature adopts, by which they are produced in the tissues of plants; yet if their action and uses be the same, all that is wanted is obtained. And if we extend this reasoning to the production of food, who can foresee the results? "Time," says Professor Frankland, in a lecture lately delivered by him at the Royal Institution of Great Britain—

"Time is an important element in the natural production of food, and although it is true, that the amount of labour required for the production of a given weight of food is not considerable, yet it is nevertheless true that this weight requires a whole year for its production. By the vital process of producing food, we can only have one harvest in each year. But if we were able to form that food from its elements without vital agency, there would be nothing to prevent us from obtaining a harvest every week; and thus we might, in the production of food, supersede the present vital agencies of nature, as we have already done in other cases, by laying under contribution the accumulated forces of past ages, which would thus enable us to obtain in a small manufactory, and in a few days, effects which can be realised from present natural agencies only when they are exerted upon vast areas of land, and through considerable periods of time."

The same author, speaking on the subject which has occupied the former part of this paper, states that—

“The recent ingenious researches of M. Berthelot have greatly extended this branch of chemical inquiry, and have, in a most important degree, increased the number of bodies capable of artificial formation. The production of chloride of methyl and the members of the olefiant gas family up to amylene ($C^{10}H^{10}$) furnish us with the whole series of alcohols and their derivatives, from amylic alcohol downwards. Phenyllic alcohol and naphthaline, both artificially produced by Berthelot, yield a host of interesting bodies; whilst phenyl-carbamic acid enables us to step from the phenyllic to the salicylic group, since, when treated with hyponitrous acid it yields salicylic acid. Lastly, M. Berthelot has succeeded in artificially forming glycerine, the basis of animal and vegetable oils and fats, and also in forming grape sugar; the latter, however, is obtained by the contact of glycerine with putrifying animal matter, and consequently cannot be said to be produced altogether without the agency of vitality; although the putrifying organic matter contributes none of its constituents to the new compound, and does not undergo any appreciable change in weight or appearance during the process. These substances yield such a numerous class of derivatives that upwards of 700 distinct organic compounds can now be produced from their elements without the agency of vitality.”

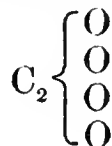
He further adds:

“It has long been known that, with slight and unimportant exceptions, the only materials employed by nature in the construction of the most complex organic compounds, are carbonic acid, water, ammonia, and nitric acid. The fact that a vast number of organic compounds are cast in the molecular mould of water, has been proved by the ingenious researches of Williamson and Gerhardt; whilst the wonderful fertility of the ammonia model has been amply demonstrated by the labours of Hofmann and Wurtz. It would also not be difficult to prove the claim of nitric acid to be considered as a third model, upon which a number of other organic compounds are built up.”

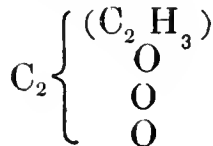
Confining his attention to the consideration of carbonic acid only, as a model upon which a very large number of organic bodies are formed, the following diagrams are given by him as illustrative:

1. The replacement of one atom of oxygen in carbonic acid by hydrogen, or its homologues, produces an organic acid, either of the fatty or of the aromatic series, thus:

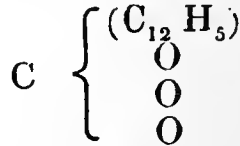
Carbonic Acid.



Acetic Acid.

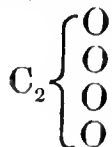


Benzoic Acid.

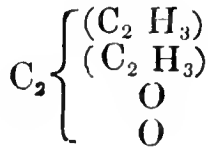


2. The like replacement of two atoms of oxygen in carbonic acid produces either a ketone, or an aldehyde, thus:

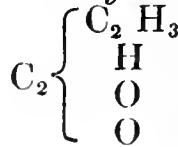
Carbonic Acid.



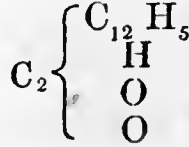
Acetone.



Aldehyde.

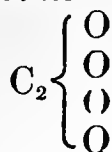


Oil of Bitter Almonds.

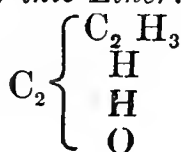


3. "The like replacement of three atoms of oxygen in carbonic acid produces an ether, thus :

Carbonic Acid.

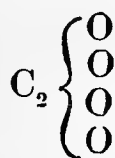


Vinic Ether.

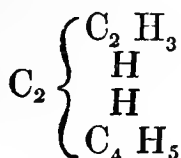


"4. The like replacement of all the atoms of oxygen in carbonic acid produces a radical, a hydride of a radical, or a double radical, thus :

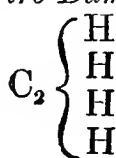
Carbonic Acid.



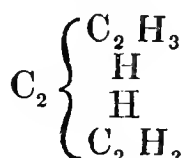
Ethyl.



Hydride of Methyl.
(*Fire-Damp.*)



Methyl-Ethyl.



The following is a list of organic bodies stated by Professor Frankland as capable of being artificially formed from their elements :

<i>Name.</i>	<i>Formula.</i>
Oxalic Acid	(C ₂ O ₃ , HO) ₂
Hydrocyanic Acid	C ₂ N, H
Light Carburetted Hydrogen	C ₂ H ₄
Urea	C ₂ N ₂ H ₄ O ₂
Formic Acid (Acid of Ants)	C ₂ HO ₃ , HO
Chloroform	C ₂ HCl ₃
Acetic Acid	C ₄ H ₃ O ₃ , HO
Alcohol	C ₄ H ₅ O, HO
Ether	(C ₄ H ₅ O) ₂
Olefiant Gas	C ₄ H ₄
Acetic Ether	C ₄ H ₅ O, C ₄ H ₃ O ₃
Oil of Garlic	(C ₆ H ₅ S) ₂
Oil of Mustard	C ₆ H ₅ S, C ₂ NS
Glycerine	C ₆ H ₈ O ₆
Butyric Acid	C ₈ H ₇ O ₃ , HO
Pine Apple flavour (Butyric Ether)	C ₈ H ₇ O ₃ , C ₄ H ₅ O
Succinic Acid	C ₈ H ₄ O ₆ , 2HO
Valerianic Acid	C ₁₀ H ₉ O ₃ , HO
Pear flavour (Acetate of Emyl)	C ₄ H ₃ O ₃ , C ₁₀ H ₁₁ O
Apple flavour (Valerianate of Amyl)	C ₁₀ H ₉ O ₃ , C ₁₀ H ₁₁ O
Lactic Acid	C ₁₂ H ₁₂ O ₁₂
Grape Sugar?	C ₁₂ H ₁₂ O ₁₂
Caproic Acid	C ₁₂ H ₁₁ O ₃ , HO
Benzole	C ₁₂ H ₆
Nitrobenzole	C ₁₂ H ₅ NO ₄
Aniline	N (C ₁₂ H ₅) H ₂
Phenyl Alcohol (Creosote)	C ₁₂ H ₅ O, HO
Picric Acid	C ₁₂ H ₂ (NO ₄) ₃ O, HO
Salicylic Acid	C ₁₄ H ₅ O ₅ , HO
Salicylate of Methyl (Oil of Wintergreen)	C ₁₄ H ₅ O ₅ , C ₂ H ₃ O
Naphthaline	C ₂₀ H ₈

"The artificial formation of urea, lactic acid, and caproic acid, is inte-

resting in connexion with certain functions of the animal economy. Pine-apple oil, pear oil, and apple oil, are instances of the artificial production of the delicate flavours of fruit, whilst oil of wintergreen and nitrobenzole are like examples of the formation of esteemed perfumes. But of all the bodies hitherto thus produced, alcohol, glycerine, and sugar, are undoubtedly the most deeply interesting, owing to the part they take in the nutrition of animals: they prove to us the possibility of producing, without vegetation or any vital intervention, an important part of the food of man. Should the chemist also succeed in forming artificially the nitrogenous constituents of food, without which life cannot be maintained, it would then be possible for a man, placed upon a barren rock, and furnished with the necessary apparatus and inorganic materials, to support life entirely without either animal or vegetable food. No one of these nitrogenous constituents has however yet been artificially produced, and the absence of all clue to their rational constitution forms at present a formidable barrier to their non-vital formation."

We have thus drawn largely from the professor's lecture, and the article has become longer than we had intended. If any excuse for this be necessary, we feel assured it will be found in the novelty and importance of the subject. Yet we cannot close it without coupling the above formations with the following transformation, which appeared in the leading literary and scientific journals some time since. By chemic aid, it would appear that the possibility of a famine will be completely averted.

HOW TO MAKE A QUARTERN LOAF OUT OF A DEAL BOARD.

To make wood-flour in perfection, according to Professor Autenrieth, the wood, after being thoroughly stripped of its bark, is to be sawed transversely into discs, of about an inch in diameter. The saw-dust is to be preserved, and the discs are to be beaten to fibres, in a pounding-mill. The fibres and saw-dust, mixed together, are next to be deprived of everything harsh and bitter which is soluble in water, by boiling them, where fuel is abundant, or by subjecting them for a longer time to the action of cold water, which is easily done by enclosing them in a sling sack, which they only half fill, and beating the sack with a stick, or treading it with the feet in a rivulet. The whole is then to be completely dried, either in the sun or by fire, and repeatedly ground in a flour-mill. The ground wood is next baked into small flat cakes, with water, rendered slightly mucilaginous by the addition of some decoction of linseed, mallow stalks and leaves, lime-tree bark, or any other such substance. Professor Autenrieth prefers marsh-mallow roots, of which one

ounce renders eighteen quarts of water sufficiently mucilaginous, and these serve to form four pounds and a half of wood-flour into cakes. These cakes are baked until they are brown on the surface. After this they are broken to pieces, and again ground, until the flour pass through a fine boulding-cloth; and upon the fineness of the flour does its fitness to make bread depend. The flour of a *hard wood*, such as beech, requires the process of baking and grinding to be repeated. Wood-flour does not ferment so readily as wheaten-flour; but the professor found fifteen pounds of birch-wood flour, with three pounds of sour wheat-leaven, and two pounds of wheat-flour, mixed up with eight measures of new milk, yielded thirty-six pounds of *very good bread*. The learned professor tried the nutritious properties of wood-flour, in the first instance, upon a young dog; afterwards he fed two pigs upon it; and then, taking courage from the success of the experiment, he attacked it himself. His family party, he says, ate it in the form of gruel or soup, dumplings and pancakes, all made with as little of any other ingredient as possible; and found them palatable, and quite wholesome. Are we, then, instead of looking upon a human being stretched upon a bare plank as the picture of extreme want and wretchedness, to regard him as reposing in the lap of abundance, and consider henceforth the common phrase, "bed and board," as compounded of synonymous terms?

REMOVAL OF A SUPERNUMERARY LEG CONNECTED TO ONE OF THE FORE LEGS OF A COLT, THE PROPERTY OF — JACKSON, ESQ., GRAYS, ESSEX.

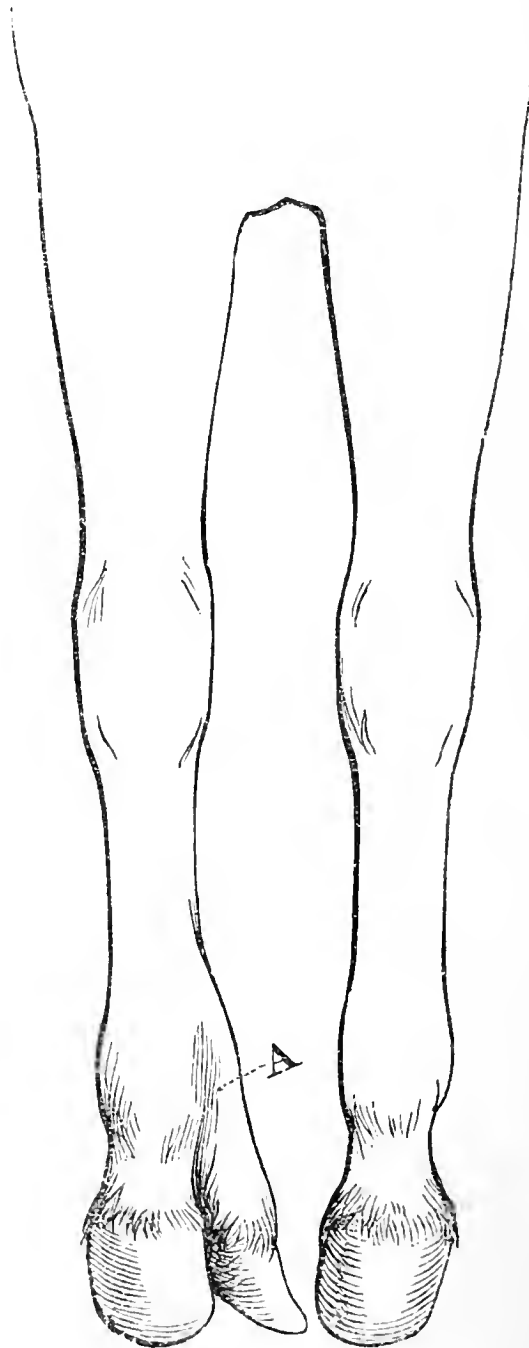
By G. VARNELL, Assistant-Professor, Royal Vet. College.

TOWARDS the close of last year my opinion was asked respecting a foal, of the cart breed, about six months old, which was described as having an extra leg growing from the inner side of the off fore one; if I thought it could be removed with safety. Judging from the description given to me of its situation, I had no hesitation in stating that it could, but that it had better be sent to the College to be operated upon. This the owner assented to, and both the foal and its dam were brought to this institution.

I now, for the first time, saw my little patient, made an examination of the supernumerary limb, and ascertained how it was connected to the leg. I found it was much larger than I had expected from the description the owner gave me, and its being removed, without leaving some little deformity, was almost an impossibility; but, as it was a cart-foal, this would not be of much consequence.

PECULIARITY OF DEVELOPMENT.

The large metacarpal bone of the off fore leg branched off inwardly. The inner division (the one to which the extra leg was attached) commenced a little above the middle of the bone, at first very small, but it gradually increased in



size, so as to be, at the pastern joint, about two thirds as large as the other, and this throughout nearly the whole of its length. It had an osseous connexion. Its inferior extremity was free from such union. It articulated with a phalange, in the same way as the other bone, from which it branched. This phalange (long pastern bone) was nearly as large as the other, and at its inferior extremity a well-developed os corona, navicular bone, pedal bone, and a hoof as large as the other, were regularly arranged and connected.

These three supernumerary phalanges were united to the true limb by the tegumental covering common to both; but, as the leg projected some little distance inwardly from the other, it had somewhat the appearance of a web-footed animal. The hoof itself was quite free, and, as seen in the woodcut, inclined inwards, the outer part of the toe only resting upon the ground.

After the foal had been in the College a few days, I operated upon the limb, the little animal first being placed partially under the influence of chloroform, which so far blunted sensation as to effectually prevent that amount of struggling which renders operations on the horse tedious. Anæsthetic agents of this class may be used in this way with great advantage and perfect safety. Not that I have known any fatal results to follow their use in the lower animals, even when full action has been produced by them; but I have often noticed that patients are a much longer time in recovering than they are when the above mode of procedure is adopted, the possibility of any serious consequences arising from their use being very much lessened, and, at the same time, our object, namely, that of performing an operation with as little pain as possible, is attained.

Unfortunately, practitioners, as a rule, especially those in the country, have not the assistance of others who are familiar with the action of chloroform, and who can administer it with that nicety so that "anæsthesia" is only partially produced, and the patient kept in a half sensitive state during the time an operation may last.

On this occasion Mr. H. Corby, the demonstrator of anatomy in this institution, kindly undertook to chloroformize my little patient; and, by carefully watching the breathing and the state of the pulse, he was enabled to keep the animal in that state of insensitiveness whereby the struggles were but few, and those only very feeble. When the anæsthætic was wholly withdrawn the colt very quickly recovered itself, and rose on its legs, as if nothing had been done to it.

In some instances, when anæsthesia has been produced to the full extent in horses, I have known them to remain insensible, and unable to rise, for as long as twenty minutes after the agent has been taken away from the nostrils. Indeed, often we have deemed it advisable to raise the head, and throw cold water on it; and when consciousness seemed to have returned, and a desire to rise manifested, we have frequently been obliged to render assistance, so as to enable the animal to accomplish the act; and even when on its legs, further support was necessary for a short distance, while he staggered away from the operating shed. I may further add, that I have seen the effects of the agent on the horse for several hours after he has been placed in the stable. But I am digressing from the particulars of my case.

THE OPERATION.

The colt was cast in the usual way, and, as soon as its legs were secured, chloroform was applied to its nostrils, as already described, and in about seven or eight minutes it was partially under the influence of the agent, which was evidenced by sensation being scarcely perceptible when the skin was pricked with a pin.

The leg to be operated upon was now removed from the hobbles, and a crib-halter placed upon the principal foot of the limb, and given in charge to an assistant. As the supernumerary leg was nearly as large as the other, it would doubtless be supplied with blood-vessels of a corresponding size; therefore, to arrest the hæmorrhage likely to ensue, I tied a piece of tape firmly around the limb, a little above the pastern joint. I then made an oblique incision, commencing from the inside, opposite the articulation of the first phalange (the long pastern bone) with the metacarpal branch of the bone, and this was carried downwards in front to the hoof. From the same point above I made a similar incision, which was carried downwards at the back part of the limb, to meet the one in front. This being done, I passed the knife quite through, from before backwards, and divided all the tissues which connected the supernumerary limb with the other, except at the articulation at the pastern joint. This I effected by carrying the knife around, cutting through the capsular and articular ligaments, and also the tendons (for the additional limb was supplied with tendons), nerves, and blood-vessels. When cutting through the nerves, a convulsive struggle took place, but it immediately subsided. The plantar arteries had to be taken up, and a

ligature placed on each. The softer structures were then brought over the stump of the metacarpal branch of the bone, and the edges of the skin placed in apposition and secured by sutures; after which some cotton wool, saturated with cold water, was applied over the wound, and over that a bandage. The colt was now released from the hobbles, and led to its box. Blood continued to ooze from the small vessels of the skin and other parts for some little time, but as soon as it had ceased a fresh pledget of cotton wool, saturated as before, was placed over the wound, and then, over the whole, a calico bandage was carefully applied.

The same dressing was used on the following morning, when it was observed that very little swelling had taken place.

About the fifth day the ligatures came away, and at the same time some of the sutures gave way; and the remainder of them were removed in a few days afterwards.

Only a portion of the wound had healed by the first intention. It nevertheless cicatrized very fast, except at the articulatory extremity of the bone from which the leg had been removed. Here the wound remained open for some time after the other parts had entirely healed. The healing at this part was retarded, in consequence of a continual flow of synovia from the synovial membrane and sheaths of the divided tendons. This, however, was arrested after a short time by the use of pledgets of dry lint and firm bandages, thus bringing the edges of the wound in closer apposition.

The wound was wholly cicatrized in about a month from the time the operation was performed.

As the owner required the use of the mare, she was removed, but the foal, at our request, was left a little longer at the College, as we wished to be fully satisfied that the wound had completely healed, which we have since found to be the case.

There will always be a small enlargement on the upper part of the pastern joint, but the colt, being of the cart-breed, and not likely to be required for fast work, we do not consider it will in any way interfere with its usefulness.

A TUMOUR IN THE LATERAL VENTRICLE OF HORSE, &c.

By R. PRITCHARD, M.R.C.V.S., Wolverhampton.

IN the report of the meeting of the West of Scotland Veterinary Medical Association, in the October number of your Journal, are some remarks by Professor McCall, of the Veterinary College, Edinburgh, on the physiology of the brain, and, in illustration of his views, he relates a case of tumour in the left lateral ventricle of a cow, which is very interesting. The talented and ingenious observations gave me much pleasure on reading them, and brought to mind a case of *tumour in the lateral ventricle of a horse*, recorded in my own case-book, which I forward to you just as it is written, without correction or further comment, not having had any intention of its being published. It is a plain register of the event.

1845, Feb. 3.—A cart-gelding, eight or nine years old, in tolerable good condition, the property of a Mr. Tandy, a respectable farmer and horse-dealer in this neighbourhood, was seized, while at work, about 10 o'clock, a.m., apparently quite suddenly, with giddiness and thrusting his head forwards, so as to threaten falling at every step. The waggoner got him home, a short distance, with considerable difficulty. After getting him into the stable he staggered, and appeared quite insensible to everything that was done to him, resting his head heavily against the front of the stall. In this state the owner bled him, to the amount of four quarts, by which time I arrived to his assistance, about 12 m. His pulse was 48, distinct, somewhat oppressed, and without force; his head was hanging low, and the jugular veins distended with blood; his muzzle, right side of the face, eyelids, and roots of the ears, œdematous, tumefied, and tender, from falling and bruising himself; the pupils were natural, not being at all dilated; the conjunctiva injected, and the membrane covering the septum nasi was of a dark blue colour, from venous congestion beneath it; the respiration was tranquil, and without stertor. When requested to move he paid no attention, and on being forced to do so he threatened to fall. I managed to get him up to the manger, from which he had receded, so as to keep his head upon a level with his body, and to obtain a free return of blood through the jugulars to the heart. In this situation he sup-

ported himself, partly by his head against the stall in front, and partly by leaning his side against the wall on his right, in a state of coma.

This case I took to be the "stomach-staggers" of Mr. Coleman, arising from the animal's feeding upon straw in the rack, and cut straw, with a few oats, in the manger. Hay being dear, none was allowed. A little linseed tea was used to wet the corn, but, I apprehend, in insufficient quantity to prevent indigestion. I gave a strong dose of physic, and directed his head and face to be wetted frequently with cold water, and water offered him often to drink.

7 p.m.—He is a little improved; is more sensible when roused; has moved once or twice better on his legs, and once broke the halter, fell backwards, and got up again. His eye is sensible to the light of a candle. When his muzzle was placed in a pail of cold water it gave him pain, and he snorted and sneezed very much, and was somewhat restive. His pulse was 45. Let him have tepid water, with oatmeal, to drink frequently through the night. About midnight he drank a gallon, was soon after much better, and drank again.

8 a.m., second day.—The coma had left him, and the swelling of the head was nearly gone. He had dunged some hard, dark-coloured fæces, and staled very freely in the night, and his appetite had returned. Gave bran mash, and water frequently to drink.

7 p.m.—His general appearance is much better. The bowels are not relaxed; dose of physic repeated.

Third day, 10 a.m.—He seems quite himself again, but his bowels are not purged, only gently relaxed.

In two days after this he resumed his work, and appeared as well as usual—in fact, as if nothing had been amiss with him.

On the 18th, being twelve days from my last visit, I was again called to see him. He had been feeding upon the same kind of dry food as before, notwithstanding I desired the owner to give him plenty of bran with his corn, and to wet his provender for some time. He was attacked just in the same manner as before, when at work, with giddiness and staggering forwards, and was with difficulty got to the stable; and, on his arrival there, he soon fell down. This was about the middle of the day. The owner bled him, to the amount of from three to four quarts, and I arrived at 6 p.m. He was then very restless; pulse 60, and weak; was swollen about the forehead, and his tongue hung out of his mouth, as if the muscles of it were paralysed. A strong dose of physic was

administered, plenty of tepid water horned down him, and his head well bolstered up during the night.

Second day, 9 a.m.—Not much better. He had passed some dark, fibrous fæces, twice, was a little more sensible, and wanted to get up. With the assistance of some men, he succeeded in doing so, but could stand only a few minutes, with all the support of the men, when he dropped down upon his haunches, being well held up in front; breathed loudly, and sighed. The pupil of the right eye was dilated; the left was bruised and swollen up, so that the pupil could not be examined. In this position he was bled five quarts, but it afforded him no relief. He was then let down, and well bolstered up, so as to elevate the head and shoulders, the head being kept well bathed with water.

6 p.m.—No amendment. Dose of physic repeated, and tepid water and thin gruel to be horned down freely, which he partook of well all through the night.

Third day, 10 a.m.—He has had a bad night, having been very restless, fighting with his legs to get up; very thirsty, and swallowing fluids from the horn freely; his bowels have been several times moved, and the fæces are soft, but not purged; his pulse is weak and quick, from the exertion and struggling. It was quite evident he would do no good if got up, and that he would not be able to stand even if placed in a sling. He was sensible to a considerable degree, but not sufficiently so to sling him; and as the bleeding and opening of the bowels were not attended with the same benefit as in the first attack, it was my opinion he would die. I administered another dose of physic; the treatment otherwise was as before. He lingered on until 5 p.m. of the fourth day, when he died.

Post-mortem examination presented the whole of the organs in the thorax and abdomen in a sound and healthy state. The horse having taken no food from the first day, there was nothing in the stomach, and but a very moderate quantity of fæces in the bowels. These were principally in the colon, and pultaceous, just in that state preparatory to purgation. The bladder was three parts full, but not distended. He had staled regularly while down. On elevating the calvaria and dura mater, the brain appeared redder and more vascular than natural, with a coagulum of blood in the longitudinal sinus, but there were no signs of extravasation externally of the cerebral hemispheres. On removing the right lobe of the cerebrum, so as to bring into view the lateral ventricle, this cavity was found filled to distension with a lemon-coloured, transparent fluid. The left hemisphere being

removed in like manner, brought into sight a remarkable condition of the lateral ventricle of this side. It was found to contain what at first appeared to be a firm, membranous cyst, which not only filled it entirely, but caused a distension of the walls of the cavity. Upon further examination, however, it proved to be a tumour, of considerable size, of a round oblong figure, much too large for the cavity of the ventricle in its normal state; and the yielding of the substance of the brain, and expansion of the cavity, were very conspicuous. The sides of the cavity were everywhere concave, and corresponded to the shape of the tumour; the septum lucidum was forced in the direction of the right ventricle, and not ruptured, so that each cavity was quite entire. The serous fluid was but little augmented within the left ventricle, but was of the same colour and character as that in the right. On a careful removal of the tumour, it was found to be an accumulation or deposit, of the same kind of earthy concretion as is occasionally found about the pineal gland. It was deposited between the membranous layers of the pia mater that invest the plexus choroides, and the first formation of the tumour evidently commenced within the plexus, and, as it enlarged, carried the membranous surface of the plexus with it, while the membrane became proportionately thickened with the increase of the tumour, and ultimately became a firm investment. Besides the lime-like substance, the tumour was composed of a cloudy, thick liquid, serving to enclose or surround uniformly the hard substance, or what I took to be phosphate of lime principally. This cloudy liquid appeared to be the material from which the concrete substance was deposited; and, in all probability, it would have been wholly converted into that substance, provided the horse had survived the necessary period. The tumour was of the shape of a kidney potato, and measured two inches and a half in length, and five inches in circumference.

Observations.—Previous to making any remarks relative to this horse's case, let us cursorily examine the structure of the brain and nervous system. I shall not put the anatomical acquirements of my readers to any inconvenience, or their memories much upon the stretch, to follow me through the brief description that I shall here give. First, we trace all the large nervous trunks, from the extremities and other parts of the body, to the spinal cord, and there we find them to arise by a double set of fibres, one from the superior columns of the cord, and the other from the inferior columns; or, if it be preferred, from the anterior and pos-

terior columns of the cord. We continue to trace the fibres of these columns upwards to eight particular bodies at the head of the cord, close to the arch of the pons varolii, viz., four pyramidalia, two olivaria, and two restiformia. The pyramidalia are usually described as two only, but these are again divided into anterior and posterior pyramids, from the course the fibres take proceeding from this part of the medulla oblongata. The fibres from the anterior pyramids that ascend enter the corpora striata, while those of the posterior proceed upwards into the thalami optici. Those fibres that descend from the anterior pyramids form, or are continued in, the anterior columns of the spinal cord, whilst those descending from the posterior pyramids enter the posterior columns. So that the fibres of the anterior pyramids are motor, the nerve-force of volition, and those of the posterior pyramids are sensory fibres, or the conductors of sensation. The corpora olivaria, the lateral eminences of the medulla oblongata, send their fibres upwards in the motor tract to the cerebellum and to the nates et testes, and downwards into the anterior motor columns of the cord. The fibres of the restiformia proceed upwards to the cerebellum, and downwards to the posterior columns of the cord, and there is an important band of fibres that descend to the anterior columns of the cord. So far we have made out the connexion between the motor ganglia of the cerebrum, called corpora striata, and the anterior or motor columns of the spinal cord; also between the sensory ganglia, called thalami optici, and the sensory or posterior columns of the cord. And by observing the communication of the sensory and motor columns of the cord, with the other portions of the brain, through the corpora olivaria and restiformia, the nature of the action, or nerve-force, transmitted by those parts of the encephalon, is readily made out. But the great sensory and motor ganglia of the cerebrum, the thalami optici and corpora striata, besides sending fibres to the medulla oblongata, also send fibres upwards into the convolutions of the cerebral hemispheres, the seat of intellect; and it remains to be mentioned, that the fibres from the hemispheres, the ganglia, and the lobes of the cerebellum, decussate each other—those of the right pass to the left side, and those of the left pass to the right side; and thus we account for lesions of one side of the brain presenting their phenomena on the opposite side of that body.

It is by an intimate knowledge of the functions of the several parts of the brain and nervous system, that we are enabled to form any correct opinion of the source of those

symptoms which the various lesions present to us in living animals; and although I have never resorted to vivisection, to satisfy myself of the absolute facts produced by lesions of the more important parts of the brain and nervous system, nevertheless I do not acquiesce in the wholesale censure of those that have. I think that, provided the painful sacrifice of a few animals, as rabbits, puppies, and pigeons, may now, or at any future time, lead to the means of alleviating pain and anguish in man and animals, the sin committed by the vivisection is worthy of atonement. The *abuse* of vivisection I disclaim and renounce. Facts once ascertained and made known, upon good authority, are quite sufficient for all the purposes of vivisection; and further sacrifice of animal life in this manner is quite unnecessary.

Now let us see what are the results of some of the lesions thus produced. We feel satisfied the faculties of sense, volition, and intellect, reside in the cerebrum. What the faculties are over which the cerebellum presides are not very clear, but I think there is little doubt of voluntary motion being the principal one. Injuries from wounds, or concussion of the cerebellum, cause the animal to go backwards; and, if the corpora striata are wounded, the animal rushes forwards. This is very remarkable, as regards the cerebrum and cerebellum. If the crura of the cerebellum is divided, on one side only, the animal rolls over and over; the eye of the same side is directed upwards, and the other strongly downwards. This effect of the division of one crura of the cerebellum is very remarkable, as the nerves supplied to the muscles that perform these movements of the eye are from the cerebrum. It is true there is a connecting commissure betwixt the quadrigemina and the cerebellum, which offers a little explanation. But that both eyes should be distorted in directions the exact reverse of each other, is singularly confusing to our views of the cerebral functions, and shows how uncertain the conclusions drawn from dissections are. When one of the corpora striata is removed, the animal, as he advances, turns towards the opposite side; but not invariably, as he will occasionally turn to the side injured. If both are removed, the animal ceases to turn round. These results prove that both the cerebrum and the cerebellum are concerned in the action of the voluntary muscles; the cerebrum in willing and directing volition, and the cerebellum in the control and regulation of it. When one of the thalami is removed, the animal turns to one side as he advances, or rather falls on the injured side: if both thalami are removed, he falls, lies motionless, and is unable to stand. When the

hemispheres of both cerebral lobes are removed, the animal is thrown into a state of profound sleep and unconsciousness; having no sense of what is passing. When the lobes of the cerebellum are removed, and those of the cerebrum are uninjured, the animal possesses its senses and the full power of its will, but appears as if intoxicated, and totters and staggers with great irregularity. The want of feeling in a large portion of the brain, when cut or pricked, is remarkable. The membranes, cerebral hemispheres, corpus callosum, anterior and posterior commissures, are without feeling. Also all the upper part of the cerebellum is without feeling: it is only manifest on approaching its cruræ. If the corpora striata are pierced into the medullary substance, signs of feeling are manifested. In the thalami it is more so; but the tubercula quadrigemina, when pierced, produce great disturbance, trembling, agitation, and convulsions: and, if it be the medulla oblongata, or pons varolii, that is injured, the effects are more violent. Such are some of the results of vivisection; but for which experiments we must have been wholly ignorant of at the present day, as dissection of dead bodies could never have revealed these phenomena. Vivisection has made known to us the co-operation of the fifth pair with the special nerves of the senses of smell, sight, hearing, and taste; which were not previously known to have any relationship between them. It has revealed to us that the superior columns of the spinal cord are the strands from which the sensory roots of the spinal nerves proceed, and the inferior to be those from which the motor are derived; and we now know what parts of the brain are endowed with sensibility and what do not possess it. Surely these are highly important facts that we have arrived at through experiments upon living animals, and such that no other could have determined. We must remember, however, that they are the effects of lesions of the brain in healthy animals, in which this organ is also healthy; and how far this information will avail us in diseases of it, is for future consideration.

Let us now examine some of the phenomena produced by morbid lesions of the brain. We have no means of observing, or but very imperfectly, the early symptoms of inflammation of the membranes, or of the substance of the brain, or of both: the cephalalgia and incoherency of speech, so important in guiding the diagnosis of the physician, cannot be rendered available in the examinations of animals by the veterinary surgeon.

The symptoms of inflammation of the membranes, and of

the substance of the brain, very much resemble each other. Somnolency, frequent pulse, redness of the eyes and nostrils, pupils dilated, sometimes contracted, delirium, twitching of the muscles, or skin, or convulsion of the limbs; to these succeed a slow, full pulse, beating of the carotid arteries in the neck, slow stertorous breathing, profound coma, and the entire loss of volition. The frequent, hard pulse, redness of the eyes and nostrils, delirium and frenzy, are symptoms of inflammation of the membranes of the brain more than of the substance of the organ; notwithstanding the faculties that are disordered in delirium are seated in the latter.

Hæmorrhage upon the periphery in the substance of the cerebral hemispheres, or in the ventricles, produces profound coma, slow pulse, stertorous breathing, relaxed state of the muscles of the extremities, dilated pupils, and blindness; lastly, suspension of all the vital functions of the body, and death.

Collections of pus in the hemispheres, especially near the surface, produce the same results.

Pus within the lateral ventricles, effusion, or tumours within these cavities, are attended with the same, but less severe manifestations. Effusions of blood, when slow, occurring upon, or within the cerebral hemispheres, effusions or tumours within the lateral ventricles, do not produce much functional disturbance in the brain, until the presence of these deposits create pressure and irritation; and then the first phenomena resulting will consist of loss of the intellectual power in commanding and directing the instinctive desires; the power of standing steady, or walking without staggering forwards, or to one side; and as the deposits continue to increase, the effects are more serious, the loss of the faculties more manifest, and the symptoms of a more alarming and dangerous character.

When the lobes of the cerebellum are the seat of hæmorrhage, effusions, tumours, or collections of pus, the results are much the same as those already described, except in the movements being backwards instead of forwards, and in the more rapid progress towards a fatal termination; and as the morbid lesions descend towards the tuber annulare, the centre of the spinal system, the more rapid the progress becomes. Hardening or softening of the cerebral lobes, in the absence of congestion, diminishes the intellectual faculties, causes paralysis, or epileptical convulsions; and, when congestion is added, vertigo and coma are produced. Irritation and pressure are the principal causes of all the pheno-

mena presented by the whole of the lesions spoken of: in a word, apoplexy, with a loss of consciousness and voluntary motion, more or less complete. Congestion, arising from an obstructed return of blood from the head, extravasation of blood within the cranium, serous effusion, abscesses, pus, or inflammation of the substance of the brain, are all causes of apoplexy. The loss of function of any part of the brain from the loss of integrity, as in vivisection, and the loss of function from torpidity, the result of pressure from effusion of blood, or serum, from tumours, or collections of pus, differ only, that in the former the loss is immediate and complete, while in the latter it is gradual and more or less incomplete.

The symptoms between the mild forms of cerebral lesions and the more violent, differ only in degree. They are alike in nature, and differ only in force and extent. Now let us see how far we are capable of ascertaining the nature and the seat of lesions of the encephalon from the phenomena during life. I have shown already, that any alteration of structure or deposit within the cranium, giving rise to pressure, produces similar phenomena. The decussation of the cerebral fibres produces the phenomena of various lesions of the brain on the opposite of the body: thus, so far as regards the hemispheres, and the sensory and motor bodies within the lateral ventricles, loss of function from any cause will produce loss of sensibility, defective volition, and imperfect vision, on the opposite of the body to that of the disorder; but nothing more conclusive, as to the nature or seat of the lesion, can be obtained. It is rare that the lesions of the encephalon, though they may be gradual in their development, manifest their existence by symptoms of so mild and progressive a character as to enable us to judge of their nature and seat; but, more commonly, they come on suddenly, and with such violence as to deprive the animal all at once of sensibility and volition. If the effects of morbid lesions of any part of the brain were confined to the part, and did not extend to the faculties of other parts of the organ, nothing would be more easy than to trace the results to their source: but such is not the fact. Pressure upon the hemispheres, or within the lobes of the brain of one side, will affect, more or less, the whole of it. The incompressible tissue of the brain, and the unyielding nature of the cranium, must ensure this in effusions, or the congestion attendant upon tumours and abscesses, after irritation is set up; so that it entirely depends upon the degree of pressure upon one side of the brain, and the extent of the congestion

that accompanies it, whether or not the phenomena are presented on one or both sides of the body. Numerous instances have occurred in which the pupil of one eye was dilated, and impaired volition, or paralysis, and insensibility existed on the opposite side of the body to the lesion in the brain, particularly at the outset of the disorder; and frequently, later in the case, both eyes and both sides have become equally affected. The pupils are usually dilated in cases of congestion, extravasation of blood, effusions of serum, and from the pressure of tumours; and, when this is the condition of one pupil only, it is very significant of the opposite side of the brain being the seat of the lesion. But it is far from being a constant circumstance. Cases will occur when the same lesions exist, and in the same parts of the encephalon in which the pupils are contracted, or one contracted and the other dilated; and both pupils have been observed to be contracted in cases where dissection has presented considerable lesion and extravasation. The pupils have been observed unaltered,—neither dilated nor contracted,—though the pressure of an abscess in one hemisphere of the cerebrum was sufficient to produce loss of vision, insensibility, and paralysis of the extremities. Uneven pressure upon the brain is probably the cause of dilatation of one pupil and contraction of the other. The contraction of the pupil is produced by a branch of the third pair of nerves acting on the circular muscular fibres of the iris, and though the radiant fibres dilate the pupil, without doubt, from whence they derive their action is by no means clear; therefore it is a little difficult to say what the altered conditions of the pupil are owing to, under the influence of encephalic lesions. We know that the pupil dilates and contracts with the decrease and increase of light, in the healthy state of the eye, with an adjustment, exactness, and precision, quite remarkable; but the altered condition of the pupil, under morbid influence of the brain, is an action of the iris, independent of light, having no relation with the faculty of vision. Vision may be seriously impaired, the animal unable to see, without any lesion of the visual organ whatever; without any paralysis of the optic nerve, and entirely independent of it; purely from a fixed position of the iris. The diagnosis from altered volition, convulsions, and palsy, I consider less to be depended upon than the size of the pupil, in the horse. The muscles of all the extremities are affected full as frequent when the disorder is on one side of the brain, as one or both extremities of one side; nevertheless, when the muscles of one side are exclu-

sively affected, it is characteristic of lesion of the opposite side of the brain; so that although we may frequently be correct in deciding upon the side of the brain on which the lesion is seated, it is by no means certain of our doing so.

It is extremely difficult to make the phenomena of disease during life agree with the appearances of the brain on dissection, in very numerous cases. Such is the exquisite structure, and incomprehensible formation of the organ, that it is very difficult to discover the connexion between the symptoms and the nature and seat of the disorder. Symptoms of the most violent description have been observed during life, manifesting lesion of the brain, and nothing the least remarkable presented upon dissection; whilst examinations of the encephalon after death have revealed vices of no ordinary description, which presented no signs whatever of their existence during life.

Occasionally we meet with phenomena rare and very singular. I may here introduce a case as an illustration. A young friend of mine, about four months since, was thrown from his horse with great violence. His head received a severe blow at the back in the region of the cerebellum, by which he was stunned. He was taken up senseless, and carried to an inn, where he remained betwixt hope and despair for a fortnight; at length he recovered perfectly in every respect, *except the sense of taste*. Such is the condition of this faculty, that beef, mutton, veal or pork, roast or boiled, taste all alike, and that not pleasant. Brandy, gin, rum, or whisky, are all the same to him; and if his eyes are shut he cannot distinguish one from the other. The motions of the tongue are perfect. It is a very remarkable circumstance, that the nerve force of the sensory fibres of the fifth pair, entering the third division of that nerve, should be so seriously diminished, whilst the whole of the nerves sent to the head and face from the sensory root of the fifth pair are unaffected. What little sense of taste still remains in the tongue is evidently maintained by the glosso-pharyngeal branches distributed to its root.

But of all the phenomena referable to lesions of the brain, those of EPILEPSY are the most difficult to account for. It is a frequent disease in man, common in the dog, but I believe it to be very rare in the horse; having, through a long period of years of close application to the profession, seen only one case, and that I will here give an account of. April 21, 186, an aged cart-gelding was suddenly seized, while eating his corn, fell down upon his left side convulsed; the eyes were forcibly drawn within the orbits, the haws obscuring the

cornea; the limbs were contracted and flexed; he then struggled convulsively with his legs, as if dying. This violent agitation soon ceased, and he lay still, breathing deeply. He then came to himself, and looked confused; he shortly got up, and remained quiet for five or six hours. A bran mash was given to him, which he partook of freely, and when he had eaten about half of a peck, he was again seized with the food in his mouth, fell down suddenly on the left side, and was violently convulsed as before. This fit passed off, and in twenty minutes he had another attack while lying down, and a fourth seizure in the course of an hour. I prescribed aloes, with camphor and opium, in a ball. While administering this ball he had a fit. To this succeeded several others, which came upon him quickly, and he died in one about twenty-four hours from the first seizure. This horse was twelve years old, and of remarkably good health; not at all loaded with flesh, but in fair working condition.

Dissection presented the stomach, and the whole of the abdominal viscera, in a healthy state, but of a pale colour for an animal dying with the whole of his blood in him. The brain was congested in its venous circulation generally; the vena Galeni was full of blood, while the plexus choroides within the lateral ventricles was not the least distended, but appeared rather diminished in bulk. The plexus within the fourth ventricle was very much enlarged, and very vascular. The posterior surface of the medulla oblongata was very vascular, every vessel distended; the pia mater quite red, and dark, clotted blood lay underneath the dura mater upon the cuneiform process of the os occipitis.

The phenomena of epilepsy have been ascribed to every lesion of the brain and its membranes, and to disorders of the whole of the viscera of the chest and abdomen; but in my opinion the morbid alterations observed in epileptic patients are more likely to be accidental conditions rather than causes of the disease. Whatever may be the remote causes of the disorder, the immediate one is a special irritation of the sensible structure of the brain; more particularly of the quadrigemina, cruræ cerebelli, walls of the fourth ventricle, medulla oblongata, and tuber annulare.

Notwithstanding that the encephalon is the fountain of the nervous system, it was necessary to the fulfilment of its own functions that ganglionic nerves were supplied to it. These it receives through the walls of the arteries that circulate it. Thus it is easy to conceive that depravation, or a morbid condition of the blood circulating in the cerebral vessels, must extend its influence to the organ, and violate its

functions; so that it is not so much a matter of surprise that symptoms during life, significant of serious lesions of the organ, should present no visible traces of them upon dissection, as at a first view may appear. Epilepsy, when the subject of it dies during the fit, may present no visible cause whatever upon dissection. The congestion observed is the result of dying in the fit, and owing to suspended respiration during the paroxysm. Of this, I think, there can be little doubt.

To reflect and annotate upon the functions and disorders of the brain, is to me a pleasing occupation; and I find the subject has led me already beyond the limits of your valuable journal, I therefore conclude with a few cursory remarks on the case of tumour in the lateral ventricle of the cart-horse.

Previous observations have explained the principal objects of it, and rendered enlarging upon it unnecessary. This horse was never known to have been amiss up to the time of his sudden seizure on the 3d February, 1845; and there can be no doubt that the attack of apoplexy on this occasion was brought on by the description or kind of food he had eaten; the retention of it in the stomach, constipation of the bowels, and working in this condition, producing congestion of the brain. This opinion seems confirmed by the relief experienced on restoring the action of the stomach and bowels; the horse appearing, on the third day, quite well. And I do think that, if the horse had been properly dieted, the period between the first and second seizure would have been greatly prolonged, the tumour apparently sharing but little in the production of it beyond facilitating or accelerating the congestive state of the brain. That the distension of the stomach and bowels with food of difficult digestion, opposing the action of the diaphragm in enlarging the chest, impeding the circulation of the blood through the heart and lungs, and consequently obstructing the return of blood from the head, and that at a time when the stomach was abstracting from the brain more than usual of its vital energy to relieve the oppression from the food within it, was the real cause of the congestion, and this of the attack of apoplexy, is clear and apparent.

In the second attack the pressure upon the corpora striata and thalami optici, from the combined force of sanguineous accumulation, and the tumour was greater, and the consequent torpidity much more considerable, than in the one previous. No relief being obtained from the treatment, the torpidity extended to the medulla oblongata, put a stop to the respiratory movement, and was the immediate cause of death.

HYDROTHORAX IN A HORSE.—PARACENTESIS THORACIS SUCCESSFULLY PERFORMED.

By G. HOLMES, M.R.C.V.S., Beverley.

NOT long since, my attendance was requested by Mr. Metcalf, of Walkington Wold, about six miles from this place, on account of all his horses being affected, more or less severely, with influenza. The symptoms present were, swelling of the glands of the throat, cough, mucous discharge from nostrils, increased vascularity of the membranes, and febrile excitement.

The usual remedial means were resorted to for about ten days, when, to all appearance, the animals were convalescent.

The mare in question was very irritable and bad tempered, and she was put to work a little earlier than she ought to have been. After working three or four days, Mr. Metcalf observed that she had fallen off very much in condition: he therefore turned her in a loose box, and allowed her to remain quiet for a week. She fed well and looked pretty cheerful up to the seventh day, when she ate very little, and began to heave at the flanks. On the next day she seemed very much distressed, her breathing had become laborious, she stretched her head straight out, and her nostrils were much distended. Mr. M. sent for me, and requested my immediate attendance, as the mare, he considered, was labouring under a very severe attack of inflammation of the lungs. In the mean time he thought he would bleed her; but his foreman wisely begged of him to do nothing until I arrived. When I got there, I at once saw that effusion had taken place, and that she had water in the chest, or hydrothorax. Not having any instruments with me for operating, I left her, with the understanding that I would return on the following morning and operate; at the same time, I gave the owner no hopes of her recovery. At eight o'clock the same evening, however, I received a message, saying it was evident that the mare could not live until the morning, and her breathing had become so much worse they could hear it sixty yards off. I went immediately, and, seeing that any delay would be dangerous, I at once made an opening with the trocar on the near side, near the anterior border of the ninth rib, when serum flowed out in abundance, and continued to do so with the greatest freedom, until no less a quantity than two and a

quarter large pailfuls were abstracted. After properly closing up the opening, I operated upon the off side, and took away thence two more large pailfuls of fluid, making in all the enormous quantity of fifteen and a half gallons. The opening on this side also being closed, I gave the following :

Alum. Sicc., \mathfrak{z} iv, solve in
Aq. bullien., Oij, et adde
Decoct. Avenæ, Oiv;
Syr. Empyreum., ℥bj. Misce.

Half an hour afterwards, the animal was allowed half a pailful of warm mash, which she ate with an apparent relish.

The next morning, at five o'clock, a ball was given to her, composed of—

Pulv. Gentianæ,
Pulv. Zingib., āā \mathfrak{z} iiij;
Ferri Sulph., \mathfrak{z} j;
Quinæ Disulph., \mathfrak{z} ss;
Mass. Com., q. s.

At 8 a.m., she had two ounces more of burnt alum, dissolved as before. In the evening, the tonic ball was repeated, and one hour afterwards, one ounce of burnt alum was given, as before.

The appetite returned quickly ; in fact she ate all that was allowed her ; and, on the third day after the operation, she laid down and rested four or five hours. The alum and gruel were continued, morning and evening, for five days ; and also the tonic balls, twice daily, for the same time. She now gained flesh fast, looked cheerful and well, and the pulse quickly fell to its natural standard. I should have stated that the pulse, when I was first called to the mare, was from 86 to 90, but remarkably weak.

Eight days after the operation had been performed, the animal was turned loose into the yard, when she jumped and played about like a foal. After this, she was turned into a good pasture to graze for a month, where she got very fresh, and was taken up to work, and is continuing to do so up to the present time, and I believe looks better than any other horse on the farm. The age of this mare is six years. I must now be permitted to say that, during my thirty years' practice, which has been pretty extensive and varied, I have operated on a great number of horses for the same complaint, but never took away more than half the quantity

† fluid I did in this case, at one time. About fifteen years

ago, I operated upon a horse belonging to H. Scott, Esq., of Oulston, from which I withdrew the enormous quantity of forty-four gallons, at nine different times. The horse lived for six weeks after this, and then died. I had treated him in the old way, giving tonics and diuretics, and allowing the most nutritious food.

I had a valuable thorough-bred horse of my own, from which I took six gallons, at three drawings, but only from one side. This animal also recovered; the only one during my thirty years' practice, beside the one now recorded. I had lately a mare in this town, from which I took nineteen gallons of fluid, but she sank under it. Effusion had taken place here, on both sides.

I am inclined to think that we make a mistake in this complaint (or at least I have done so) by operating too soon. After an effusion has taken place, the system appears to be labouring under a great deal of irritation, from the cause existing that gave rise to it. I have often found horses to suffer a great deal after abstracting the water: so much so, that they have not fed at all until the following day.

Whether or not to attribute the success of this case to the action of the astringents given is for the profession to decide. But as I have failed in so many cases to effect a cure by our usual method of treatment, it struck me that alum, given in a largely diluted state, combined with tonics, might be of service; and it has proved to be so, even beyond my most sanguine hopes and expectations.

I shall be most happy to obtain the opinions of my professional brethren on the point, so that we may all contribute something to our stock of knowledge, which may lead to the more certain relief of our suffering patients, and the benefit of the profession at large.

CASE OF SPASMODIC COLIC, WITH RUPTURE OF THE COLON.

By R. H. DYER, M.R.C.V.S., Waterford.

THE following case is one fraught with some degree of interest to the veterinary profession.

On the 7th of the present month I was suddenly summoned to attend an aged brown gelding, the property of a

gentleman residing about half a dozen miles from this place. It was stated the animal was labouring under an attack of colic. Not being able to attend for some two hours, I forwarded my usual colic-draught, consisting of Tinct. Opii et Sol. Aloes, cum Spt. Æther. Nit. et Spt. Ammon. comp. This I was informed gave speedy relief.

Upon examination of my patient I found him very dull, the pulse but little affected, respiration normal, mucous membranes unaltered in appearance. The introduction of my arm up the rectum disclosed nothing particularly remarkable, merely a small quantity of thick mucus. I perceived, however, the odour of Spt. Terebinth. in the box-stall, and also upon the neck of the animal. Upon inquiry, I was told that a certain medical man had the evening before mixed up a dose for the horse, of Ol. Ricini et Ol. Tereb., both of which agents I have abandoned the use of for some years past, at least as internal remedies. I mentioned this to the owner of the horse at the time, and stated my regret that such had been given.

The history of the case, as far as I could learn, was this : On the day before, Saturday, the animal was at work as usual, drawing a cart upon the farm, when he was suddenly taken ill; he was instantly removed to the stable, when all the ordinary symptoms of colic showed themselves. At this time the worthy doctor was consulted, and who as worthily prescribed the drench before mentioned. The horse was quietly removed to this place during the Sunday, and appeared to be recovering; but there was a difficulty in producing an action of the bowels. Nothing passed in the shape of fæces from Saturday until Monday morning, when I observed a mass of thick stringy mucus covering a copious evacuation. This I did not like, and jumped to the conclusion that something was radically wrong; not from the fact *alone* that so large a quantity of mucus was voided, but also from the *general appearance* of my patient.

The symptoms all this time were not of a severe or violent nature, quite the reverse. They seemed to indicate *deep-seated languishing pain*, better known to the experienced veterinarian than described upon paper. My opinion was an unfavorable one from this day. The treatment adopted by me was that calculated to ameliorate the sufferings of the poor animal. From Monday until Saturday, the only important symptom present, beside those already described, was this; every five minutes, when the animal was standing, he would *attempt to urinate*, but there was no secretion going on, in fact all the secretions had ceased. At noon on Saturday I found the

eyes amaurotic, and then had him removed to the outer yard to die, which he did a couple of hours after.

The *post mortem examination*, held some time on Monday morning, disclosed the after-mentioned appearances. On opening the abdomen I found nearly all that the animal had taken during the week floating about in that cavity. Portions of the intestines were somewhat inflamed, the *colon* was *ruptured*, and several inches of the large flexure were quite black and much thickened; the stomach was distended with gas, the cuticular membrane studded here and there with small pits formed by the ravages of bots, about a score of them being in that viscus, and the whole of the cuticular lining membrane separated from the muscular coat, as if it had been macerated in boiling water; the liver was soft and its colour changed; the kidneys were so altered in shape, colour, and consistence, that they could scarcely be recognised, and no secretion could have been going on in them for days; the bladder was empty; the lungs, as a matter of course, were congested; the heart had a very singular appearance, the veins leading to this organ were full of coagulated blood, firm, not unlike fibrine. I should also state that the whole muscular structure of the abdomen and chest was pallid. The animal had been a crib-biter for some three or four years.

I do not know if it be necessary to make any remarks upon this case, except to state that disease was in existence for a long time prior to this illness. From some unknown cause, colicky pains were frequently produced, and the administration of the Ol. Tereb. finished the business. I never remember giving this oil, except in combination with Ol. Lini, that I had not cause to regret it, hence its abandonment by me. I would therefore caution young practitioners to consider this fact when using turpentine.

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By WALTER WATSON, M.R.C.V.S., Rugby.

WITH a hope of aiding the onward progress of our science I have availed myself of the kindness of the editors of the *Veterinarian* to bring before the members of our profession a subject which, considering its importance and usefulness, has remained far too long neglected by us. This may have arisen

from several causes, but the chief are from its not being included in our education when students, and from not having the subject brought sufficiently directly under notice from any other source. In endeavouring in some measure to remedy the latter evil, and to lay before the profession some remarks upon botany in its applications to veterinary science, I feel that I have set myself no ordinary task, inasmuch as I have many difficulties to contend with, not the least of them being my own inability to do justice to the subject, so as to make it either instructive or interesting to a class of readers, the great majority of whom are perhaps unacquainted with its simplest outlines. I know there are some few who will altogether condemn the introduction of this subject as being of no practical value, and as calculated rather to bewilder and obscure what scientific knowledge the veterinary surgeon is already possessed of. To such I would say, Dream on ! For dreams they are—would that they were as fleeting—although no power of mine can awaken you from so mistaken a sleep. But to those who watch what is going on around them, who see every day, nay almost every hour bring forth some effort of the mind which startles and astonishes the world ; when men of all ranks and all professions are being borne with such rapid and almost resistless force along the stream of advancement, surely we of all others cannot afford to remain as it were waterlogged on its course. No, rather let us rally round the common standard of our profession, and by oneness of sentiment, by unity of mind and action, by steady uncompromising exertions and self-sacrifices of time and effort, promote the general good, and the day will not be far distant when we shall occupy our true position among the leading professions of the land.

BOTANY in its applications to veterinary science is both practically and scientifically useful. When we perceive the great advancement made in the science of agriculture by the application of chemistry to it, and see plants forced by artificial stimulants from their ordinary state of nature to one of increased growth, assimilation and development, it becomes of deep import to ascertain what effects these changes in the vegetable may have upon animal life. Plants have a very delicate and perfect organization ; they are very sensitive and susceptible of extraneous influences as regards both health and disease, and it becomes a question not only of scientific interest, but of national importance to ascertain what are the results of this interference with the natural habits of the plant. And upon whom does this duty devolve ? Surely it belongs to those whose special calling it is to

administer to the wants and necessities of animals in relation to health and disease; who watch with jealous attention anything that may tend to interfere with the one or produce the other; that is to the qualified members of the veterinary profession. And how can we fulfil this duty without a knowledge of botany? We may have been taught chemistry, with the anatomy, physiology, and pathology of animals; but all these, although so many helps in our investigations, will, without the knowledge of botany, be of little use. This fact alone then ought to convince us as to the value and importance of this science to the veterinary surgeon. It is here seen to be both practically and scientifically advantageous, and would tend to raise us in the estimation of our employers and the world at large, as scientific men.

Another view in which this science is of practical use, is in relation to the medicinal substances we employ. It is chiefly in regard to this that it is considered necessary to be included in the education of the human practitioner. Has it, I would ask, less claims upon us? We surely ought to be fully acquainted with the botanical characteristics of the plants we use as medicinal agents, not only to prevent being imposed upon by the admixture or substitution of some inferior or different article, which I am sorry to say is not unfrequently attempted, but also to enable us to take advantage of those medicinal plants which grow in our own neighbourhoods, so as to obtain them in their best condition for our use. It is also of some importance to ascertain what effects climate, position, or other agencies may have upon plants, so as to increase or decrease their medicinal properties: here we shall find botany of the greatest value.

But in no department is a knowledge of this science of greater practical utility than in reference to the poisonous influence which some plants have upon our domesticated animals. In the detection of poisons, whether vegetable or mineral, we possess, it may be said, a great advantage over the human practitioner, inasmuch as the quantities required to produce poisonous action upon most of our domesticated animals is comparatively larger, and therefore with greater facility detected. But without a knowledge of botany, in regard to the detection of poisonous plants, this is not of much advantage to the veterinary surgeon; for with what certainty could he pronounce the contents of a stomach when laid before him to contain this or that plant, without knowing the characters by which it is distinguished? It is true he might guess, or he might from some other sources form an opinion as to what it was, but guessing and uncer-

tainties are here of no use ; in fact, they are worse than useless, as they may do harm. But having a knowledge of botany, he examines the contents with care,—and it may be calls in the microscope to his aid,—and as he does so he finds conclusive and self-convincing evidence of the presence of some poisonous plant. And in reply to his employer, it is not “I think,” nor “I have reason to believe,” but a positive assertion—“I am satisfied of the existence of such a plant in the material you requested me to examine.” It is well known that not unfrequently large numbers of animals suffer from the poisonous effects of some plant growing in the pasture in which they are placed ; or it may be gathered with the grass and made into hay, and the veterinary surgeon is called upon to attend these animals, and he is requested by the owner to examine the herbage or the fodder upon which they have been feeding. How much he is at fault here unless he knows something of botany. But to show its usefulness in this division I think I cannot do so more forcibly than by relating a case which occurred to myself some time ago. I was requested by a gentleman living in Rugby to go and see two valuable greyhound puppies (one of them being the now celebrated dog “Perceptible”), which he said had got the distemper. I found the animals in what the attendant described as fits ; lying upon the ground partially insensible, with a quantity of frothy mucus escaping from the mouth, &c., and other symptoms evidently showing the centres of the nervous system to be much affected. I inquired how long they had been unwell, and when they first exhibited the symptoms they were then suffering from. He told me they were playing about in the morning, and seemed quite well, but in the evening, upon looking at them, he found them in their present state. My curiosity being somewhat excited, I requested to be permitted to see the place in which they had been confined. I found it to be a part of an old flower-garden, in which they had been turned loose that morning for the first time ; and upon looking round I discovered several remnants of different plants, &c., which by the playfulness of the puppies had been pulled to pieces, and amongst them portions of the stems and leaves of the *aconitum napellus*, or monkshood, those parts of the plant being then in their greatest activity. Here at once was a clue to the symptoms the animals exhibited. In short, they were suffering from the poisonous effects of the aconite, and by the timely employment of antidotes, in a few hours they recovered.

(To be continued.)

OBSCURE DISEASE OF THE LUNGS, COMPLICATED WITH SPINAL AFFECTION, IN A HORSE.

By C. PERCIVALL, Student of Veterinary Medicine, Sheffield.

FEELING much interested in the following case, I watched its progress with some minuteness.

My preceptor, Mr. Cartledge, was requested to attend a black cart-horse, aged, and in good condition, belonging to a manufacturer in this town. There seemed nothing amiss with him, beyond loss of appetite and some inability to perform his usual labour, and he was accordingly thrown off work. About a week from the time of our seeing him, I attended, in Mr. Cartledge's absence. From the man's account, the horse was continually attempting to void urine; and, in the efforts made, some pain was manifested. The pulse numbered 50 in the minute, without there being anything unusual in its character; the visible mucous membranes were a little heightened in colour, and the horse was still off his feed. I gave a dram and a half of powdered opium, in a soft ball, and the uneasiness quickly passed off. Tonics were administered for the next few days, and the horse seemed so far to recover as to warrant his being put to light work.

The man, however, still complained that the animal was unable to do his work; that he stopped frequently, and seemed exhausted. He was now brought to our infirmary; and, in the absence of any other symptom than this excessive weakness, we were at a loss to discover from what the horse was suffering. The pulse at this time beat from 46 to 48 in the minute, and the mucous membranes were of their natural colour; there was no cough; the breathing was undisturbed, and the animal appeared cheerful; the excretions were regular, but the appetite was impaired.

It was thought that the absence of a general healthy tone in the system was the cause of what has been stated, and the free use of vegetable and mineral tonics was resorted to, and to all appearance the horse again soon recovered. The appetite now was decidedly good; and, when led out, he was lively, and it was considered that he might safely return to work.

This, with some difficulty, he performed for a week or ten days, when he was again placed under our care. The breathing now was somewhat laboured, and, what appeared

to me rather extraordinary, his mane and tail were constantly soaked by perspiration, which was strictly confined to these parts, the surface of the body being in all respects natural. He was also very weak; still he was cheerful when out of the stable, but he was evidently losing flesh rapidly. Mr. Philips, V.S. to the 8th Hussars, then quartered in Sheffield, saw him with Mr. Cartledge, and expressed an opinion that a disease of the spine was to some extent the cause of our patient's illness. This conclusion was arrived at from the fact that, at this time, there was considerable stiffness of gait, and an unwillingness to elevate the tail. The animal had not lain down since he was admitted. A blister was applied along the whole course of the spine, and the tonics were repeated. These had the effect of bringing about a return of the appetite, and our patient consumed a peck of oats and a liberal allowance of hay daily. To all appearance all seemed to be going on well, when, in a few days afterwards, although in all other respects the symptoms remained unchanged, a discharge of a greenish and unhealthy appearance, and in which small quantities of blood might be seen, issued from both nostrils. This led Mr. Cartledge to conclude that the animal would not recover. The perspiration about the mane and tail increased, being still confined to these parts, and the tail was obstinately kept close to the body. The blister on the spine had acted tolerably well, and the tonics, which were given night and morning, kept up the appetite. It is scarcely necessary to give a detail of the symptoms which showed themselves from day to day; it will be sufficient to state that the discharge from the nostrils increased in quantity, and its character became more offensive. The horse now lost flesh rapidly; and after lingering in this state for nearly three weeks, he died, apparently from exhaustion, without any expression of pain.

On a *post-mortem examination*, the lungs were found to be partially consolidated; and in the trachea a large quantity of the same kind of fluid existed as had found its way from the nostrils. Under the skin, along the course of the spine, there was an effusion of serum,—doubtless the effects of the blister,—and, excepting a general unhealthy appearance of the whole of the viscera, no other indication of disease was to be seen.

MYLABRIS.

I do not know whether the *mylabris cichorii* has got into general use among the members of the profession but we

employ it largely. Indeed, it forms our only vesicant. We think its action more to be depended upon than that of cantharides, and it has other advantages over these latter beetles, being less expensive and forming a neater compound.

Facts and Observations.

METALLIC SUTURES.

SUTURES made of metal have been for a long time used by veterinary surgeons, those of tin being preferred on account of their flexibility. "Professor Simpson," says the *Medical Times and Gazette*, "proposes to treat hydrocele by the use of a metallic seton, as a far safer proceeding than tapping and injecting. Believing that metallic wires passed through the sac of a hydrocele would act, first by draining off the fluid, and secondly by exciting adhesive inflammation, he put his idea to the test on a patient of Dr. Young's. The sac was first transfixed from below upwards by a long-handled needle. The eye was then threaded with three or four fine pieces of iron wire. By withdrawing the needle the seton was drawn into its place and fixed. The fluid drained off in a few hours. Adhesive inflammation set in and went on for two days, when it began to subside. The wires were removed on the third day, and the case was regarded as a complete cure, the vaginal sac being firm and consolidated. For tying arteries and arresting bleeding in surgical operations, Dr. Simpson is showing that metallic sutures are also likely to be very useful. Dr. J. Murray tied the carotids of a cat with palladium wire seven months ago, and Dr. Simpson showed these vessels lately in Edinburgh. They were completely obliterated, and there had been so little thickening or exudation around them that it was difficult at first to trace them. Had they been organic ligatures of silk or hemp, they would long before seven months had elapsed have set up suppurative action. These facts should be known to practical men—they are likely to have great influence on the surgery of the 'good time coming.'" [The iron wire used by Dr. Simpson, as suture-thread, is the common blue iron wire, No. 32 of the wire-measurer's gauge.]

A NEW ANTISEPTIC.

M. FALCONEY has recently introduced to the notice of the medical profession a new antiseptic agent. It contains a large proportion of dried sulphate of zinc, mixed with sawdust of the common pine. The *rationale* of its action is supposed to be—"the sawdust keeps the oxygen of the atmosphere from access to the body, and the emanations from the body are oxidized in the sawdust by the atmospheric oxygen. Hence there is no escape of the fetid gases. Their internal decomposition is prevented by the sulphate of zinc absorbing the water of the body, deliquescing and recrystallizing as hydrate, probably with seven equivalents of water of crystallization."

ACTION OF ANÆSTHETICS, AND HOW CHLOROFORM KILLS.

DR. J. CHAPMAN in a letter addressed to the Editor of the *Medical Times and Gazette*, states, that having given considerable attention to this subject, he has arrived at the following conclusions:

"1. That as oxidation of nervous tissue is a condition of nervous action, the adoption of any process which will prevent such oxidation will produce anæsthesia.

"2. Chloroform, ether, amylene, and other hydrocarbons, if inhaled, induce anæsthesia by cutting off more or less completely the supply of oxygen to the blood as it passes through the lungs, and—being combustibles, instead of supporters of combustion—by combining with such oxygen as may still be associated with the blood-corpuscles, they at once prevent the oxidation of nervous tissue and suffuse the system with carbonic acid. Hence the anæsthesia of extreme drunkenness and of the last stage of croup.

"3. That nitrous oxide, which is a powerful stimulus in the first stage of inhalation, induces anæsthesia by causing an abnormally rapid combustion throughout the system, and thus generates so great an amount of carbonic acid in the capillaries as to prevent the access of further oxygen. When this stage is reached, oxidation of the nervous tissue is no longer possible, and anæsthesia is the result.

"4. That the safety of anæsthetic agents is in inverse proportion to their power.

"5. That when anæsthetic vapours destroy life, they do so

by three processes : (*a*) by impeding oxidation of the brain they lessen or stop the transmission of cerebral influence to the heart through the pneumogastric nerve ; (*b*) by impeding the oxidation of the nervous ganglia in the substance of the heart itself, they lessen its automatic action ; (*c*) by impeding the passage of the blood through the lungs, anæsthetic vapours effect the congestion of those organs with its consequences—distension of the branches and trunk of the pulmonary artery, and mechanical obstruction of the right ventricle, which becomes at length so great as to stop the heart's action altogether.”

Extracts from British and Foreign Journals.

ON THE EQUIVALENCY OF STARCH AND SUGAR IN FOOD.

By Mr. J. B. LAWES and Dr. GILBERT.

AT the meeting of the British Association at Belfast, the authors had given a paper, “On the Composition of Food in relation to Respiration and the Feeding of Animals,” in which they had illustrated, by reference to experiment, that as our current food-stuffs go, it was the amounts they supplied of the assimilable non-nitrogenous rather than those of the nitrogenous constituents, which measured both the amounts consumed by a given weight of animal, within a given time, and the amount of increase obtained from a given weight of food. The results, which formed the subject of the present communication, afforded further illustration of some of the points brought forward in the former one ; but they had been arranged with reference to certain practical questions as well as to the more scientific bearings of the subject. Thus, those interested in the growth of sugar had long wished to obtain the introduction of the lower qualities of that article, for feeding purposes, duty free. The subject of the remission of the malt-tax, for the same object, had also frequently been agitated. According to the results of experiment (numerous tables of which were exhibited in the room, and in which the animals had been made to rely for about one third of their total food upon the starch or sugar employed), it appeared that absolutely identical amounts of

the dry substance of the starch and sugar, which had thus been tried against each other, had been both consumed by a given weight of animal within a given time, and required to yield a given weight of increase. The identity, therefore, in feeding value, which had, from the known chemical relationship of these two substances, been hitherto assumed, was thus experimentally illustrated. If, therefore, sugar had no higher feeding value than starch, the relative prices, weight for weight, of sugar and the starchy grains generally used for feeding purposes, but which also supplied the needful nitrogenous constituents, would afford an easy means of estimating the probable economy of the use of the former. These new results were also consistent with direct experiments, published by the authors some time since, "On the Comparative Feeding Value of Malted and Unmalted Grain." It was true that malt and other saccharine matters might serve, in some degree, to give a relish to the food, and thus induce the animal to consume more, which in "fattening" is always a consideration; but this incidental benefit could not counterbalance much increased cost; hence, it did not seem probable that any extensive use of malt for feeding purposes would be such a boon as had been supposed. The proved equivalency of starch and sugar in food was also of interest in reference to some other of the views maintained by the authors in their former paper. Thus, it had been shown that a fattening animal might store up very considerably more fat than existed ready formed in its food; and this produced fat was, doubtless, in a great measure, due to the starchy and saccharine substances, which constitute so large a proportion of the non-nitrogenous constituents of our staple vegetable foods. It was these, too, which, in practice, served largely to meet the requirements of the respiratory function, which, it had been shown, under ordinary circumstances, measured to such an extent the amount of food demanded by the animal system.

CAUSTIC LINT.

M. RIBOLI has proposed to saturate lint with a solution of nitrate of silver, and then dry the lint. He uses different degrees of strength, so as to vary the activity of the application according to the nature of the sore. He states the solid form of the nitrate is often objectionable, and a solution of it too transient in action.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

A communication has been received by us from St. Petersburg, accompanied by a manuscript, entitled—

A NEW METHOD OF CASTRATION AS PRACTISED IN RUSSIA.

By M. L. BASSE, Master of Veterinary Science, and Veterinary Surgeon
to the Emperor of Russia.

THE author begins with the history of castration, tracing its origin anterior to the time of the Greeks and Romans, and informing us that it was not practised in England before the reign of Henry VII. He next examines into and comments upon the different modes of operating, as adopted in different countries. The method recommended by him is by means of an instrument called an *ecraseur*, which was invented by M. Chassaignac, a French physician, for the purpose of removing polypi in the cavities of the human body.

The instrument is very simple. It consists of four pieces, viz., an iron ring with a handle, a screw and knot, or top, and a small chain. The operation is performed in the following manner: The horse, being cast and secured in the usual way, an incision is made through the scrotum and the tunica dartos. The instrument is then applied on the cord, the chain tightened, and the testicle is separated by the continual turning of the instrument. The remaining part of the cord enters the abdominal ring. The other testicle is now proceeded with in the same way, and the operation is terminated. There is very little loss of blood, and the animal may be turned out the same day. The cure is perfected in about three weeks.

Annales Vétérinaires Bruxelles for Aug. and Sept., 1858.

ON SHOEING OF HORSES THAT TURN THE TOE OUTWARDS OR INWARDS.

By M. F. DEFAYS, Professor of Pathology and Surgery.

THE powerful influence of the application of the shoe in modifying the action of the horse, is a well-known fact; but

care is not always taken to preserve the hoof in its natural shape, and to obviate the effects of the shoe. This is principally applicable to two well-known defects, viz., one, the turning out of the toe; the other, when the toe turns inwards. The smith does not carry his attention any farther than to prevent the horse cutting his legs, but the principles of shoeing should attempt more. It should aim at the restoration of the (*aplomb*) level bearing of the animal's foot on the ground.

1st. *The horse turning his toe outwards.*—On examining a horse presenting this defect, we perceive a deviation in normal structure of either the whole limb, or merely of the lower part. In the first instance, the elbow is closely applied to the chest, and the whole of the leg is turned outwards. It is difficult to place the hand between the olecranon and the parietes of the chest. In the second instance, the deviation begins at the knee; or perhaps the fetlock is only more towards the medial line than the heels; or finally, the hoof only deviates by the removal or undue wearing of the inner quarter. If, in taking up the foot, it is found that the outside branch of the shoe is more worn than the inside one, the corresponding side of the hoof is more elevated. When, however, the defect arises from the articulation, the contrary takes place. These defects are not always of the same importance. When they are caused by the inequality of the hoof, the remedy is simple; and all that is to be done is to give a level bearing to the foot, by the application of a suitable shoe. If the deviation depends on the articulation, then the remedy must be effected by making one side of the shoe thicker, and also by certain modifications in placing the nail-holes. (The shoe advocated is somewhat similar to our feather-edged shoe.) The principal object is to alter the action of the horse, so as to make him turn his toe more inward; and to prevent cutting, which is consequent on this conformation of the foot. The contrary defect is, *when the toe turns in*. This is to be remedied by making the outside of the shoe thicker, so as to throw the weight more on the inner quarter. In this case the elbow is turned outwards, so much, in some cases, that the fist may be easily placed between the olecranon and the chest.

ON THE RED COLOUR OF VENOUS BLOOD.

By Professors GLUGE and THIERNESSE, Members of the Royal Academy of Medicine of Belgium.

IN a paper read at the Academy of Science in Paris, by M. Claude Bernard, he proved, according to the experiments laid by him before the meeting, that the venous blood of the different glands is red, like that in the arteries, when these organs are in full activity; and that it is only when they do not secrete, or perform their usual function, that the blood becomes of a dark colour. This was first observed in 1845, by this learned physiologist, in the renal vein of the dog, when making some experiments in order to ascertain the elimination of certain substances by the kidneys, and he has again observed it in making fresh experiments on dogs and rabbits.

These observations have been repeatedly made, principally on the kidneys and the submaxillary glands. M. Bernard has remarked, that when the urine passes, drop by drop, through the ureters, the blood, as well as the kidneys, is red; while, on the other hand, if the secretion be suspended, both are black. He has also ascertained that by exciting the submaxillary glands, by means of vinegar introduced into the mouth, the blood in the veins directly assumes a reddish colour. The same occurs when the sublingual nerve is excited by galvanism. Other experiments made by M. Bernard on the parotid gland and the glands of the intestinal tube, have furnished similar results.

These important discoveries having been made by the eminent professor of the College of France, as soon as they were made public other experiments were instituted, not from any doubt of their truth, but on account of the great interest they possess in a physiological point of view.

Several experiments were made by MM. Gluge and Thiernes on the dog, rabbit, horse, and sheep, the results of which were, first, that the venous blood of the kidneys was found red, but not so red as the arterial blood, when those organs are in active secretion; but when the secretion became suspended, then the blood was of the same dark colour as that in the vena cava. Secondly, that the venous blood of the parotid and submaxillary glands does not change its dark colour, even when these glands are under special exciting influences, and secreting abundant saliva.

ON DISEASES OF THE NASAL CAVITIES OFTEN
CONFOUNDED WITH GLANDERS.

By L. V. DELWART, Professor, &c.

THE professor states that of all diseases to which domestic animals are subject, glanders is, without contradiction, the one that has been from remotest time the most perplexing to the veterinary practitioner. In spite of all that has been written, and veterinary literature is very rich on this subject, the nature, cause, and even the primary seat, of this fearful affection have hitherto escaped us. Nowhere are the characteristics of this disease sufficiently described so as to enable us to diagnose with certainty, and to distinguish it from other affections which have their seat in the nasal cavities and the sinuses of the head of the solipede ; and the same may be said of the pathological and physiological facts which have been acquired. Every time that the mucous membrane which lines the cavity or the sinus becomes the seat of an undue secretion, the divers alterations which develop themselves consecutively are, as long as the affection remains local, nearly the same, and have nothing specific in their character ; and they accompany all these affections in a more or less degree of intensity. The secretion, when prolonged, forms accumulations in the sinuses, and the matter, by its long retention, becomes altered and irritating in its nature, and, as in glanders, it is absorbed by the lymphatics and their ganglions, and these become enlarged, resembling in every respect true glanders. The mucous membrane also becomes diseased from the acrid matter, which causes erosions on its surface, more or less in size, and which are very difficult to distinguish from the ulcers of glanders. No wonder, then, that many veterinary surgeons condemn nearly all the horses that have a discharge from the nose and an enlargement of the glands, in the belief that they have to do with glanders. And even when they have some doubts as to the true nature of the malady, they will condemn them rather than incur the responsibility which the law imposes on them, and also on the proprietor, in case other horses should be infected on treatment being adopted. Daily horses are slaughtered whose affections, taken in time, and with a rational mode of treatment, would have admitted of an easy cure. But being confounded with glanders, for which up to the present time no cure has been found, they are sacrificed, and thus a large amount of property is lost, which would have been saved had these diseases been better understood.

Mr. Delwart, having been for nearly twenty years clinical

professor at the Veterinary School at Brussels, has had ample opportunities presented to him, and having carefully observed many cases, is of opinion that at least one third of the horses which are slaughtered for glanders are not glandered: further, they are susceptible of a cure being effected. Also, that all those cases which are designated as chronic glanders, might at the beginning have been nothing more than a benign simple local affection, and which only becomes serious by its duration and the absorption of the virus. These might be easily cured at the commencement by proper treatment, in the same manner as syphilis, before the virulent matter had become absorbed. Of all the affections of the nasal cavities which have resisted the treatment, are those in which the mucous membrane has already assumed a leaden hue, striated with a bluish red, which is caused by the veins being gorged with blood, becoming enlarged, and consequently more apparent. This appearance is indicative of true glanders, and is consequently incurable. Is not this peculiar aspect of the membrane the first symptom that the disease has invaded the system generally, it having extended to the vascular tissue, which is distributed over the whole system, and thus speedily the morbid virus is carried to every point of the body? Are these signs those of phlebitis? or are they not concomitant with those conditions which, when an acrid matter has accumulated in an organ highly vascular, would be productive of malignant phlebitis? At the same time an alteration of the blood is taking place, and then, like all other malignant or septic diseases, it has very little chance of being cured, and speedily terminates in death.

This ingenious interpretation, the writer states, belongs to his colleague, M. Husson. By it we are able to account for those facts which we have always observed, viz., the impossibility of a cure being effected when the cyanous aspect of the mucous membrane was present, and also the frequent curability of the case when that appearance was wanting.

Professor Delwart does not pretend to cure glanders, but only those affections of the nasal cavities where the mucous membrane has not, with the ulcers, acquired the leaden hue above mentioned, which he considers indicates true glanders. His method is trephining the maxillary and frontal sinuses. This operation was introduced first by Lafosse, sen., for the cure of glanders, but the little success obtained from it had caused it to be almost forgotten; however, by this operation the nasal cavities can be effectually explored, so as to find the seat of the morbid secretion, the ulcerations of the

mucous membrane, the caries of the bones, or cartilages, and to apply the remedies directly to the affected parts. If Lafosse did not derive all the advantages from this operation he anticipated, it was because his cases for the application of it were not well selected, and the injections were not of a nature to modify the secretion from the diseased mucous membrane, or to cauterize the already formed ulcers. The medicinal agents to be employed are the acetate of lead, or the sulphate of zinc, the nitrate of silver, or alum, all diluted with water.

This statement is followed by many cases successfully treated during a period of twelve years. The conclusions arrived at are—

1st. That of these cases, some of which had been condemned, and others would no doubt have been condemned, as glandered, by the majority of practitioners, were only affected with catarrhal gleet, which is curable.

2dly. That the local treatment suffices to effect a cure.

3dly. That on account of the peculiar organization of the parts affected, the direct opening of the sinus by the trephine enables the remedies to be immediately applied to the affected parts.

4thly. The object of the therapeutic agent resorted to must be to stimulate the mucous membrane, so as to check the secretion and cauterize the ulcerations.

5thly. That the *mixture de villate* and the solution of caustic potass have afforded the best results. However, the nitrate of silver, the alum, and sulphate of zinc are very useful, principally towards the end of the treatment.

6thly. That the successful treatment of such a number of cases resembling to all appearance glanders, and generally considered as incurable, was the result of a proper application of the remedies.

7thly and finally. This ought to be a warning to exercise more caution and less precipitancy in condemning horses as glandered without a careful examination of them, and subjecting them to some treatment; using, however, all the means recommended to prevent accidents; by which there would be a diminution in the number of horses annually sacrificed as glandered.

[For many years past the operation of trephining the sinuses of the head—namely, the frontal, maxillary, and nasal—depending upon the seat of the disease, subsequently injecting tepid water, so as to dislodge any accumulations, and following this up with a solution of sulphate of zinc or copper, has been resorted to at the Royal Veterinary College in cases of nasal gleet with decided success.—Eds.]

The advantages derivable from the operation have also been taught in the lectures of pathology delivered at the College.

THE VETERINARIAN, JANUARY 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE ANNUAL ADDRESS OF THE EDITORS.

“Time doth transfix the flourish set on youth,
And delves the parallels on beauty’s brow ;
Feeds on the rarities of Nature’s truth,
And nothing stands but for his scythe to mow.”

SHAKESPEARE.

QUICKLY indeed has the old year run out its fleeting course, and we are called upon to report what progress, has been made during it.

Science, in common with time, never stands still. Some little of what she has done, in connexion with our profession, may, perhaps, be gathered from these annual addresses to our readers. Unfortunately for the interest which might otherwise be excited by them, a sameness must almost necessarily prevail. Hitherto they have been all we could desire, and it is gratifying at the onset to be able to say, that as yet nothing has transpired to render this report less satisfactory than others. We have kept on the “even tenour of our way,” pleased and encouraged; yet have we not accomplished *all* we had anticipated, and much remains to be done. In this we may not stand alone; and possibly others will join with us in the language of the moralist :

“All must remember, and admit, with what ardour of good intentions they entered upon the past year. Time has fulfilled all its promises to us. Its storied page, rich with the present moral and ancient experience, has been fairly unrolled; opportunities have been afforded us; our prayers for life, health, and capabilities of knowledge, have been graciously heard. Have we profited to the utmost, or even as we might readily have?—Alas, no! The year which in anticipation beheld resolutions so fair, now in the retrospect, in most

cases, gives back only a sad array of time misspent—exertions misapplied—disappointed hopes—unavailing cares, and empty pleasures. Truly may the world's course appear to have passed among mouldering things. Its joys, where are they? Gone; they perished in the using. Where on its onward way is the goodly fabric of its virtuous actions, its high resolves, its active charities? They are not to be marked—or only strew our paths with the most unseemly of all decay, the works of good design unfinished, or but begun. Shall we then arraign the prospects and opportunities of our own pilgrimage, or despair of improvement? God forbid. A retrospect of the past will convince us that if we have not reaped, it is because we failed to appreciate our advantages. This truth firmly established—and where can doubt find a place?—will both direct and cheer us in the work of improvement. Salutary reflection on former errors, a last look, not only to each year, but to each day or hour, will strengthen our judgment and purify our practice for the future. From the ruins of the past we may thus erect the memorials of a virtuous fame, and instead of using the words ‘A happy new year’ as the language of formality and hypocrisy, we may give to them their real import and significance—a desire to extend the blessings of peace, and joy, and happiness to the whole family of man. With these sentiments and this feeling we wish in all sincerity to our friends and readers

“ ‘A HAPPY NEW YEAR.’ ”

The past year has been equally big with events as others that have passed into eternity. We have seen the eastern part of the world shaken to its very centre. There the sword has continued to execute its fierce commission, and even now, like the mighty surges of a subsiding storm, or the last throes of a volcano before its force is fully spent, we hear from time to time of the sad devastating effects of ruthless war. May we not confidently hope that ere the present year closes, and now that Her Gracious Majesty has been proclaimed Queen of India, sweet Peace,—as she has done in a neighbouring country,—will have swayed her olive branch over this, one of

the fairest regions of the earth, rich with the wealth of Ormus and of Ind; and Commerce, hand in hand with Liberty and Truth, entering, will awaken anew the energies of man, and extend the domain of each? Then "the shield shall hang idly in the hall, and the spear be no longer used for the purpose of destruction; then the earth shall be ploughed with the sword with which once man slew his fellow-man, and the vine be pruned with the spear embrued with his blood."

But, fortunately, we have not to do with the politics of the world, nor even with those of our own profession. We have withdrawn ourselves into a much smaller circle, and it is only with the events of the past year in connexion with our literary efforts that we are now concerned.

If in our pages during the year there have appeared some controversial communications, we have endeavoured to remove from them all unnecessary personalities. It has been well observed that, "not the least difficult, and certainly the most delicate of journalistic duties is that of deciding on the publication of correspondence." Do what the Editors may, satisfaction will not be given to both parties. "The insertion of such correspondence is like the letting in of water: the flood will stop only when you shut down the sluice gates; and every drop shut out thinks it has just as much right to get in as well as that which went before."

Unlike the sun-dial, it may have been ours to number other than sunny hours, although even these last are marked by a shadow, which perchance, such is the perverseness of human nature, we are more disposed to notice than the brightest sunshine. Hence, reviewing the past editorially, we perceive much to exist that we could wish had not been, and much that might have been better done, but

"Humanum est errare,"

is the old motto, and only too true. Hope, however, buoys up our expectations for even a more auspicious future. There are already some green spots in memory's waste—like oases in the desert—and it will ever be to us a source of the highest

gratification to remember the kind support we have hitherto received from our friends, without which this Journal would not have been what it is. We trust in its continuance, so that our pages may become a faithful record of the state, the wishes, and the doings of the profession. We think we perceive some gleams of advance taking place among us, like the quiverings of early day before the sun rises in rich effulgence, scattering the tarrying shades of night. But we yearn for a more earnest co-operation, assured that then all will be well.

We are no strangers to the spirit of indifference that has crept over the minds of many of our members. But it is with communities as with the ocean, which has its spring and ordinary tides, its ebb and flow. We are all too much disposed to slumber. Be it ours to rouse from this state of lethargy ; for we cannot think it is a time for folding the hands and indulging in luxurious ease. There remains much to be done by us as a body. As journalists, we are not sounding any alarm. We are only desirous of awakening the profession to a just sense of the position in which it stands. We have gained a *status*. To maintain and to advance it, continued efforts have yet to be made. As watchmen, we dare not shut our eyes to what is going on, nor close our ears to the wants that are expressed. We are desirous of co-operating, for we have a duty to perform, and have no wish to be mere spectators, but earnestly to put our shoulders to the wheel. It is the slothful man only who says, "There is a lion without ; I shall be slain."

From what has been already effected, there is much ground for encouragement. We have never cloaked our sense of the responsibility connected with our position ; and although we shrank not from the task, we have at times felt the duty to be somewhat oppressive, and now and then a fear has arisen in the mind lest we should be found unequal to the demands made upon us, from having other duties to perform ; and, by one failure, damage the cause we had undertaken. Our desire has been to act impartially, to seek out what is new and interesting connected with our

profession, or that of the kindred sciences, by which its onward progress may be promoted. We have, therefore, been prevented from becoming laggards; and culling from all, from month to month, our Journal has borne evidence of what is going on in the world of general science around us; and we trust our readers will at least give us credit for honesty of intention and endeavour, even should we have failed to accomplish all that they might have anticipated from us. They will kindly throw the mantle of charity over our many faults; thus shall we be stimulated to persevere, and, in the end, realise both their expectations and our own.

It is satisfactory to find that a gradual increase in the number of our contributors has continued to take place. Even the present number records fresh adhesions on the part of those we have long known. This we rejoice at, because to them belongs the most important division of the Journal, and it is, therefore, just what they make it. *Esto perpetua*. Then will our pages become too few for the influx of matter—

“A consummation devoutly to be wished.”

Already, owing to pressure on our space, we have been obliged freely to resort to the use of small type, and to keep intact the divisions of the Journal we have been frequently compelled to abridge the selected articles. We trust, however, that, in making these condensations, we have not lessened their real worth, for we well know the difficulty this often presents.

We have also continued to avail ourselves of the labours of those who have trodden the same path before us, not hesitating to act upon the advice—“If you would save the tedious processes of study through which your forefathers have passed, accept the result of their scrutinising researches, and thus learn wisdom.” This because there is much in the two professions that is common to both; the one, therefore, can borrow from the other, and both be advantaged. Acknowledgments have been received by us that the suggestions made from time to time, founded on the introduction of

new remedies and modes of treatment of diseases, by practitioners of human medicine, being adopted by our professional brethren, have proved successful. This might have been anticipated, from the laws of life being the same, and that where similarity of structure is, there will be similarity of action.

Equally gratifying is the exchange of journals that has taken place, and which continues to increase, although from no solicitation on our part. This, at least, shows that science is progressive, and of world-wide estimation. Here we would express our obligation to Mr. Ernes, for his kindness in undertaking to give us, from month to month, extracts from and translations of articles in the Continental veterinary periodicals, the value of which cannot be questioned. We are enabled by this to see what our professional brethren abroad are doing, and to avail ourselves of their discoveries. May we not, without self-flattery, believe that they, too, derive a corresponding advantage from our labours? We would not have it said that, as journalists, we have not kept pace with the spirit of the age. It has been our endeavour and desire to do so, and we are quite willing that others should share with us the merit; not being vain enough to suppose that, by our unassisted efforts, this object has been gained.

Some might have observed that the sons are taking the place of their fathers. This is as it should be, for they must soon supply our places, and with many of us the all-important change is not far distant, when it will be said, They have fought the fight—the battle is over. And

“Like the warrior smitten down
Amid the piles of dead,
Ere his life’s last drops are gone,
Lifts his bruised head
Where his flag blazes bright,
As the foe breaks into flight,
Sends to the sky
His battle-cry,
So they have bid the world—Good night.”

On this account we have gladly held out the right hand of

support and encouragement to our younger friends; for, although there may be in their contributions much that arises from want of experience and opportunity of observation, time will cure all this, since "ideas are like beards—men are not born with them. They are acquired by age." To such we say—Persevere; for actuated by praiseworthy motives, and a love of the profession you have chosen, you cannot fail of success.

And now to draw this address to a close. It will be conceded that the retrospect is cheering, and we believe the prospect is no less so. Some little good we trust we have been instrumental in doing, even if it be only in continuing a work so nobly begun, and respecting the value of which most unequivocal proofs have been given us by the increased support of the profession. As we have commenced, so we intend to continue. Our confidence is unabated, because our resources have become more numerous. May there be no disappointment.

As heretofore, from month to month we have been called upon to record the departure hence of many with whom we were once associated. In the language of Longfellow, we may say—

"'Twas at thy door, O friend! and not at mine,
The angel with the amaranthine wreath,
Pausing, descended, and with a voice divine,
Whispered a word that had a sound like Death.

"Then fell upon the house a sudden gloom,
A shadow on those features pale and thin;
And softly, from that hushed and darkened room,
Two angels issued, where but one went in."

Yet soon the like visit will be paid to us. May we then be enabled, in the full assurance of faith, to say—

"Enter thou obscure,
Grand angel—not of ill:
Come thou but once, and then, whene'er thou come,
Glad, we'll go home."

ON THE SCIENCE OF BOTANY AS APPLIED TO VETERINARY MEDICINE.

It is with unalloyed gratification we direct the attention of our readers to the first of a series of papers on "Botany as applied to Veterinary Science," by Mr. Watson, M.R.C.V.S. For years we have held but one opinion as to the value and importance of this science in connexion with veterinary medicine, and have gone so far as to assert that we thought it of even greater moment than as connected with human medicine, with which from the very earliest ages it has been associated. This circumstance, in all probability, arose from most of the therapeutic agents in olden time being of vegetable origin. Chemicals have now, however, to a large extent, supplanted the use of Galenicals. Still, from vegetables we continue to derive many medicinal substances, especially those which contain the active principles of plants, which is effected by the aid of chemistry.

But the principal reason why we have always advocated an acquaintance with botany, is the fact, that most of the animals which come under the care of the veterinary surgeon feed on vegetables or their products ; and although nature has given to animals instinct by which they generally avoid that which would prove prejudicial to them, yet occasionally, when pressed by hunger, or when excited by fondness for a particular plant, or when it has become accidentally mixed with others by which its deleterious properties have been hidden, it is well known that they will eat thereof, and death, in many instances, has been the result. Again, in the prevailing love among stablemen, carters, &c., for getting or keeping their horses in condition, as they designate it, how frequently is it the case that certain herbs or plants are resorted to by them, and being given in large quantities, although for a time with seeming impunity, nevertheless in the end they prove destructive of life. To this may be added the occasional malicious administration of such as are known to be poisonous. Nor must it be forgotten that vegetables, by different modes of culture, soil, and climate, have

their activity either increased or diminished ; and, to add no more, they may become affected with disease, of which we need only give one instance—the production of ergot in grasses—and animals feeding on them when in this state suffer oftentimes intensely. But if it be only that derangement of the digestive organs is set up, we know full well how many maladies have their origin in this. And then, to assign no more reasons, there is as yet the undiscovered cause why *some* plants prove so deleterious as they are known to be, such as yew, and the English rye-grass. Under all these circumstances, it appears to us to be very desirable that veterinary surgeons should be conversant with the leading principles of botany, and we are glad that Mr. Watson, with whom this science has been long a favorite study, has chosen our Journal as the medium of communicating them to the profession, the members of which we well know are frequently called upon to decide as to whether a certain plant or vegetable partaken of has given rise to the symptoms manifested by the animal they are requested to attend.

We concur with Mr. Watson in the views he has taken of the probable effects of high cultivation by the use of artificial manures, and did we want another fact to convince us of the practical benefits derivable from an acquaintance with botany, we would take that with which he closes his first paper.

We would assure our younger friends, the rising members of the profession, that they will find the study of botany a source of almost indescribable pleasure, and highly conducive to health, whilst, also, it will be to them a relaxation from severer studies. Often, when a youth, the opening dawn has been anticipated by us as we rambled the fields in search of specimens, disturbing the lark, who carolled sweetly as upwards he rose to greet the sun. These specimens were afterwards compared with books of illustration at home, whenever favorable opportunities presented themselves during the day, for there are but few avocations that do not admit of this. Too often, however, such are allowed to pass away unheeded, or it may be they are occupied by less profitable pursuits. How pleasing is it in early spring to watch the

bursting buds and opening snowdrop, or, when it is more advanced, to gather the primrose and the violet, and inhale the perfume of the thorn? Nature has her harbingers of the seasons, each beautiful in its order of time, and conducive to the awakening of thought, not unmixed, it is hoped, with a glow of delight and gratitude to the God of Nature. Thus, "the shady vale may be brought to remembrance by its retiring gems; the roaring ocean by its vegetable organisms; the tranquil pool by its floral mantle; the mountain top, the Indian plain, the polar zones, by their characteristic vegetation." These, perhaps, will be designated the mere ornamental parts of the science, while in medicine we have to do with the useful; but the one is often, very often, the index to the other, plants being distinguished by their flowers, which arrive at perfection at different periods of the year, known by changes in these appendages. This knowledge has been acquired by a study of botany, and is built upon observation. But although much has been discovered, there yet remains much to be sought out. All is not yet ascertained. Especially is this the case in reference to the application of this science to veterinary medicine. We too often accept for truth that which is only traditional, and after we have investigated the matter we frequently find out our error.

Under all these circumstances, we deem botany to merit recognition by us, and more especially by the student. Difficulties may, nay will, at the beginning present themselves in this as in every other science; but method, zeal, and perseverance, will be sure to surmount them all. Many, it is true, may find it hard

"to climb

The steep where Fame's proud temple shines afar;"

but it should ever be remembered that it is difficulty which excites attention and creates interest; that it is labour—real, downright labour—which impresses and secures the knowledge in the attainment of which it was expended.

ROYAL COLLEGE OF VETERINARY SURGEONS.

AT a meeting of the Court of Examiners, held on the 22d ult., the following gentlemen, late students at the Royal Veterinary College, London, having undergone the necessary examination for a diploma, were admitted as members of the R.C.V.S. :

- Mr. G. A. Whitemore, Shepton Mallet.
 - G. Scully, Dublin.
 - W. R. Stanley, Leamington.
 - G. Brown, Leighton Buzzard.
 - T. K. Quickfall, Caistor.
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ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

FROM their late REPORT we extract the following:—

The Society consists at the present time of—

- 79 Life Governors,
- 134 Annual Governors,
- 916 Life Members,
- 4076 Annual Members, and
- 18 Honorary Members,

making a total of 5223 members, or an increase of 77 names on the list since the last half-yearly meeting. The council have filled up the vacancy in their body, occasioned by the decease of Mr. Paine, of Farnham, by the election of Mr. Thomas, of Liddington.

The funded property of the Society in the name of the trustees has been raised by further investment to the amount of £10,000 stock in the new Three-per-cents.

They have gratefully accepted the offer of Mr. Thompson to continue his valuable services as the sole editor of their journal.

The council have adopted the following schedule of prizes for essays and reports, to be sent to the secretary by the 1st of March next, namely—

Results of microscopic observation applied to the vegetable physiology of agriculture	£50
Agriculture of the Islands of Jersey, Guernsey, Alderney, and Sark	25

Steam cultivation	£25
Extent to which tillage operations act as a substitute for manure	20
Modification of four-course rotation consequent upon modern improvements	20
Varieties of wheat, barley, and oats best adapted for high farming	20
Causes of the increased difficulties of turnip culti- vation, and the remedies	20
Comparative cost of high-condition of land pro- duced by purchased cattle food, or by purchased manure	20
Any other agricultural subject	10

Lectures have been delivered before the members by Professor Henfrey "On Vegetable Physiology," and by Professor Simonds "On the Composition of the Blood, and the Diseases with which that fluid is connected in the animal economy.

Professor Voelcker, the consulting chemist of the Society, has made to the members, at the weekly councils, various communications on points of practical interest connected with the adulteration of guano, and the feeding properties of cotton-seed cake. He has also recently presented to the council, through the chemical committee, a detailed statement of the works carried on by him as the chemist of the Society, in his laboratory at Cirencester, and also a plan of the various arrangements he has in contemplation, in order that he may be enabled more fully to carry out the practical usefulness of his scientific labours. The council have adopted an enlarged schedule of the privileges enjoyed by members of the Society in availing themselves of Professor Voelcker's professional aid.

The Chester meeting proved in every respect the most important one hitherto held by the Society; the number of visitors exceeded by many thousands the average amount of former years, and the liveliest interest was exhibited throughout the district in the proceedings of the occasion.

The council have decided that the Warwick meeting shall be held in the week commencing Monday, the 11th of July next. The Society's prizes for live stock will exceed by £58 the total amount of prizes offered last year in this department; and third prizes have been added to the great majority of the classes for cattle, sheep, and pigs. The council have decided to adopt several arrangements connected with the mode of distinguishing the prize animals, and the restriction of local prizes to competition in their own classes, which

they hope will be found to be improvements in their respective application.

The council have the satisfaction of recording the rapid advances of the Society in carrying out successfully the several objects for which it was established.

By order of the council,

JAMES HUDSON, *Secretary*.

London ; December, 1858.

Veterinary Jurisprudence.

MARLBOROUGH STREET.

Using a Glandered Horse in a Public Vehicle.

WILLIAM WALKER, cab-driver, was charged with plying for hire with a horse, the property of Mrs. Elizabeth Liverson, cab-owner, of the Horseferry Road, it being unfit at the time for public use, being infected with a contagious disease, namely, glanders.

The summons had been adjourned two or three times at the request of the defendant.

Brown, 176 C, said that about the 11th or 12th of August last, while in South Audley Street, he saw the horse drawing a four-wheeled cab, it being driven by the defendant. He stopped and examined the horse, and found it was discharging matter from the nose, had two sores under the throat, and he believed it was suffering from glanders, and seemed in great pain.

George Hazell, hackney-carriage attendant in the Waterloo Road, said that he examined the horse, considered it a glandered one, and told the defendant so.

For the defendant, *Mr. Thomas Doller*, veterinary surgeon, of Bulstrode Mews, was called, and said he knew the horse. It had a discharge at the nose for eight days. He did not see it discharge dark-coloured matter with streaks of blood, and there was no appearance of glanders.

To-day all parties were again in attendance, when *Mr. Arthur Cherry*, veterinary surgeon to the police, said he had that day examined the horse outside the court, and it was glandered in both nostrils.

In answer to a question, *Mr. Cherry* said a horse would live several months though infected with glanders.

Mr. Doller said when he saw the horse seven weeks ago, it had a cold and discharge at the nostrils, with enlarged glands. It was generally supposed when a horse had a discharge at the nostrils it was glandered. The horse in question was not glandered, and had not been within seven weeks, and was fit for public use. They did not shut themselves up when they had colds.

Mr. Bingham, feeling some difficulty in deciding where doctors disagreed, and in a case of such importance to the public, resolved upon

sending the horse to the Veterinary College for examination ; and some time after, on Brown, the constable, returning, the following certificate was handed to his worship :

“Royal Veterinary College, College Street,
Camden Town, Sept. 25, 1858.

“I certify that I have examined the horse brought by Police-Constable Brown, 176 C, and I find that the horse is infected with a highly contagious disease termed glanders, and that it ought at once to be destroyed.

(Signed)

“GEORGE VARNELL, Assistant-Professor.”

On behalf of the defendant, it was asked that the summons might be again adjourned for a month, as a highly respectable surgeon had stated that it could be cured, and that that would be the best test whether it was glandered or not.

Mr. Bingham said he refused the request. He had done the best by evidence and inquiry to get something to satisfy his own judgment. He should therefore order the defendant to pay 40*s.*, and the full costs. At the same time, as it was dangerous, and he had not the power of ordering it to be destroyed, he would advise the owner not to make use of it.

On the part of the owner it was again stated that she was not satisfied, and would endeavour to have it cured.

ARMY APPOINTMENTS.

THE following gentlemen have lately received appointments as Veterinary Surgeons for Her Majesty's Service in India :

Mr. J. Quallett, M.R.C.V.S.
,, F. F. Constant, M.R.C.V.S.
,, H. Farrell, V.S.

OBITUARY.

DEATH OF MR. GEORGE WATTS.—To the extensive turf-obituary of 1858 we regret to have to append the name of Mr. George Watts, the father of the Irish turf, which event occurred at his residence, Jockey Hall, Curragh, on the 30th ult. Mr. Watts was by profession a veterinary surgeon, and at the head of the firm of Watts and Pall, who acquired a

celebrity equal to that of Professor Spooner, Mr. Field, or Mr. Mavor in England. As an owner of horses no man was more successful in Ireland, having bred Blackfoot, Whitefoot, Magpie, Chitchat, Chatterer, Chatterbox, and The Baron. The greatest English races he ever won were the Doncaster, St. Leger and the Cesarewitch, with The Baron, who was trained for him by John Scott, simply from the circumstance of the latter having been overheard to remark, when he saw the horse run at Liverpool, that "if he had him he would win the St. Leger with him." This he did, and although Charles Peck, the trainer of Miss Sarah, who ran second, objected to The Baron on the score of age, an examination by Mr. Field, of London, Mr. Holmes, of Thirsk, and Mr. Axe, of Doncaster, pronounced the objection to be void. Afterwards, carrying 7st. 8lb., The Baron beat Wee Pet, Vol au Vent, and twenty-four others for the Cesarewitch, and was then sold to Mr. E. R. Clark, who ran him for the Cambridgeshire, in which, although second favourite, he was "nowhere;" and although he ran Spithead to a head for the Trial Stakes at Epsom afterwards, The Baron never again distinguished himself, and was ultimately sold to the French Government, with whom he at present remains. Throughout his career on the turf Mr. Watts sustained an unblemished reputation, and his name will long be regarded with respect on the Curragh, where he carried off the Angleseys on several occasions, and most of the "good things" of the Irish turf.—*Bell's Life*, Dec. 4th, 1858.

Saunders' News Letter states that the late George Watts, Esq., of sporting celebrity, died worth £40,000, besides large freehold property, which descends to his successor, J. Brennan, Esq., of Dublin.

Neither of the above extracts gives the age of Mr. Watts. He must, however, have died at a "good old age," as he obtained his diploma from the Royal Veterinary College in 1797.

We have also to record the death of Mr. John Williamson, M.R.C.V.S., of Dalkeith, which event took place on the 4th ult. His diplomas bear date Edinburgh, 1839; London, 1841.

Among the names of men of celebrity who have died during the past month we find that of Dr. Bright, F.R.S., who for many years was chemical examiner to the Royal Veterinary College. He died on the 16th ult., in his 70th year.

MISCELLANEA.

SUBSTITUTES FOR WATER IN THE DESERTS OF AFRICA.

DR. LIVINGSTONE, having suffered from the absence of water, in common with his attendants and oxen, during his travels, observes :

“But for its own children the Kalahari Desert is not without resources. There are large quantities of grass rising in tufts, with bare spaces between, which serves for food to some species of antelopes that can subsist for months without drinking. In the stomachs of elands, when killed, there is sometimes found a considerable quantity of water, although it was impossible that the animals while living could have had access to any. Other creatures, such as the steinbock, the gemsbock, and the porcupine, are enabled to subsist by digging up bulbs and tubers containing moisture. One of these, named *Leroshua*, is a real blessing to man as well as beast. It appears above the ground in the form of a small plant with a stalk not thicker than a crow-quill, but on digging down a foot or eighteen inches a tuber is found of the size of a child's head, containing a mass of cellular tissue filled with fluid like a young turnip. Another kind called *Mokuri*, a herbaceous creeper, deposits underground a number of tubers as large as a man's head, at spots in a circle of a yard radius around the stem. The natives strike the ground on the circumference with stones, and when the difference of sound indicates the existence of the water-bearing tuber beneath, they dig down and find it about a foot below the surface. Yet more remarkable is the water melon, which, when a little more rain than usual falls, covers vast tracts of the country. In 1852 an English traveller took advantage of their abundance to go straight across the desert from a point a little south of Kolobeng, lat. 24 deg., long 26 deg., to Lake Ngami. His oxen subsisted on the water melon for no less than twenty-one successive days without drinking, and on reaching water at the expiration of that time appeared indifferent to it.”

INOCULATION FOR THE DISTEMPER IN CATTLE.

INOCULATION for the distemper in cattle has been carried on on a very large scale in all the south of Russia, according to M. Jesseu, Professor at Drossat, and with the greatest success. The liquids inoculated are the tears, the nasal mucus, and the serum of the blood.

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Communications and Cases.

TUMOUR IN THE VENTRICLE OF THE BRAIN
OF A HORSE.

By H. PYATT, M.R.C.V.S., Nottingham.

Dec. 8, 1858.

MY DEAR SIRS,—I have forwarded to you the brain of a horse, which I think is an interesting specimen of disease, and if you should think it worthy of notice, I shall feel obliged by your giving a short account of it in *The Veterinarian*.

The horse was bred by his late owner. He was a draught horse; and in good condition when I was called on to attend him in October last. It was late in the evening when I saw him, and I did but little that night. On the next morning I found him apparently well, with the exception that he could not masticate his food, a defect which he never got the better of. Subsequently to this period he had several attacks, each worse than the preceding one. He would, when seized, lie in his box as if paralysed for about twenty-four hours at a time, when he would get up and walk about again as usual. In the last attack he was down for two days, and consequently we had him destroyed. Besides the tumour, the ventricles of the brain contained an ounce and a half of serous fluid.

Yours, &c.

To the Editors of the 'Veterinarian.'

COMMENTS ON THE ABOVE CASE, BY ASSISTANT-PROFESSOR
VARNELL.

It is to be regretted that we are not favoured with a more detailed history of this interesting case, from the time
XXXII.

Mr. Pyatt first saw the horse up to the period of his death ; for had this information been supplied, together with any peculiarities which had been observed previously, it might have furnished us with materials which, added to the stock of knowledge we already possess on diseases of the brain, would aid in forming a correct diagnosis of such affections, and also in prognosticating with greater certainty their probable results.

Among other things, it would be important to have known whether the horse had been a very gross feeder ; if he had often been subject to any gastric or intestinal derangement ; if he was of a costive habit of body, as well as what was the state of his breathing under all circumstances. Further, if he had ever shown any vertiginous symptoms ; if towards the latter period of his life he had been observed to partially fall asleep when standing ; if any defect in his hearing, or vision, or smell, existed, and if so, in what degree. Such information could not have failed to assist Mr. Pyatt in determining the true nature of the malady. But we all know the difficulty there is in obtaining the previous history of patients which come under the care of the veterinary surgeon. We should also have liked to have been informed what was the age of the horse, and the length of time that usually elapsed between one attack and another ; and if there were any peculiar symptoms preceding the attacks, such as an unusual dilatation or contraction of the pupil of one or both eyes ; also whether there were any twitchings of the muscles of the eyelids or lips ; or loss of motion or sensation of any part of the head or face ; or if coma had been observed at intervals between the attacks, which are said by Mr. Pyatt to have been paralytic in their nature, and to have lasted a long time.

It will be allowed that these inquiries have more or less bearing upon the pathology of the disease in question, and being considered in conjunction with the *post-mortem* appearances, the case would have been very instructive. Mr. Pyatt will, therefore, pardon the liberty we have taken in alluding to them, as we have done so with a view of exciting inquiry in the mind of the aspirant to veterinary knowledge.

We have no doubt that Mr. Pyatt duly considered all these points, so as to arrive at a satisfactory conclusion of the nature of the disease, and to warrant him in ordering the horse to be destroyed. Many of the members of our profession, and especially the junior portion of it, have not however had the necessary experience to assist them in forming such an accurate diagnosis.

We have to regret that the brain arrived at the College in such a state as to render it impossible for us satisfactorily to describe all the morbid changes it had undergone, or the particular parts of the organ which had suffered most from the ravages of the disease. The superior portion of each hemisphere of the cerebrum had been removed, the ventricles laid open, and some of the commissures divided. This would have mattered but little, but it had been much shaken in its transit.

The most prominent abnormal condition which we observed upon examining the lateral ventricles was a large tumour situated in each. The one in the left ventricle was much larger than that in the right. The larger one was about one inch and a quarter in diameter, and about two inches in length. They were both slightly curved in their form. The inner extremities, which were directed towards the foramen of Munro, were a little smaller than the outer ones. The long diameter of the tumours was placed transversely to that of the brain. They were of a grayish-brown colour, roughened on their surfaces, and in places slightly nodulated. On a more minute examination of them we found numerous granules, varying in size from that of a pin's head to double this, disseminated through their structure, and to consist, as far as the unaided eye could determine, of earthy and animal matter, mixed with a few shining, scale-like particles. According to an analysis made by M. Lassaigne of a similar concretion, weighing 54 grammes (about 14 drachms), of the size of a small hen's egg, taken from the right ventricle of the brain of a horse, it was found to consist of—

Cholesterine	58
Membrane and albuminous matter	39·5
Subphosphate of lime	2·5
	<hr/>
	100·

It is stated that, during the life of this animal, the tumour produced no observable symptoms. I should think, however, that the concretions in Mr. Pyatt's case contained a larger proportion of the earthy phosphates than is shown by the above analysis, and even a greater quantity than is met with in many of the concretions which are frequently seen in connexion with the lateral, third, and fourth ventricles of the brain of the horse. We rarely dissect the brain of an old horse or an old ass, without finding the plexuses of vessels more or less enlarged by similar depositions. In

some cases I have noticed numerous little bodies, like rows of flattened pearls, studding the free borders of the choroid plexus of the lateral and fourth ventricles; and in such instances I should imagine that cholesterine very much preponderated. As far as could be observed, the inner surface of the ventricles of the brain in question was much altered in form, doubtlessly by the pressure of the tumours. The body of the fornix was raised, and its posterior crura seemed to be much thinner than natural, and the foramen of Munro was also enlarged. The anterior portions of the *thalami optici*, especially their tubercles, were flattened. The gray commissure looked pale and disintegrated, as if it had been saturated with fluid; the *septum lucidum* was very thin; the *corpora striata* were very pale, flabby, and shrunk; and the inner part of the anterior lobes of both hemispheres of the cerebrum was of a yellow tinge, and much softened. Such, as far as I could discover, were the chief lesions; others may have existed, but if so, the state of the organ precluded their being detected.

We shall refrain from attempting to account for such phenomena as we suppose might have existed during the life of the animal, and which would correspond with the structural disease we have described, any further than simply to notice the inability of the horse to masticate; the time he would remain in a recumbent position apparently paralysed; and the coma which doubtless more or less existed. His inability to masticate was most likely caused by an interference with the inferior division of the fifth nerve. The want of power, at times, to support himself, depended upon pressure on the region of the cerebellum, pons varolii, and medulla oblongata in particular; but was further influenced by the disease of the cerebrum. The coma depended upon pressure upon the inner substance, imparted to it by the tumours and the fluid found in the ventricles, thus producing *partial paralysis of the brain*.

An interesting account of similar concretions may be found by referring to the 'Abstract of the Proceedings of the Veterinary Medical Association,' 1837-8, p. 211.

We have regretted the absence of a fuller account of the symptoms, which we believe must have existed in the above case, but which, during the life of the animal, were not observed as indicating cerebral disturbance. We nevertheless cannot but feel indebted to Mr. Pyatt for giving us an opportunity of examining *post-mortem* the brain of an animal so singularly affected, as he has described this one to be, prior to his determining upon having the horse destroyed.

The lesions which we have narrated show that morbid changes were going on long before any sign existed that such was the case; or at any rate, visible to common observers. Therefore, in a legal point of view, I believe such cases ought to be recorded, and it is with this consideration that I am desirous of adding the following singular instance which has lately come under my notice.

In this case we are almost entirely without any history of the symptoms, except a very vague account of what took place a few hours before the horse died.

The following is a brief description of it, taken from notes in the catalogue of the College museum, the cranial and part of the facial portion of a head being therein placed as a specimen, showing the alteration, which we believe had gradually taken place, without, as far as we know, any symptoms being observed during the life of the animal.

On the 29th of November, 1858, the owner of the horse had driven him about twelve miles, and on his return observed how remarkably well the horse had performed his work. He was sent as usual to a livery stable, where he was put up. On the following morning the owner was informed that the horse was down, and unable to rise, except partially. In this state he was partly dragged and partly led across a yard to another stable. A veterinary surgeon was sent for, who either bled or attempted to bleed the animal, but he died in a very short time. From the time he first fell, up to the period of his death, although unable to rise, he struggled violently and continually. The carcase of the horse, immediately after death, was brought to the College for examination.

The abdominal and thoracic viscera were minutely examined, but no disease whatever could be detected. The whole of the muscles also were carefully removed and examined, and as we anticipated a fracture of some of the vertebræ, they also were minutely inspected; all of them, however, as far as we could detect, were free from any such lesion. We next examined the head, and found a depression of the frontal bone of the right side to exist, immediately opposite the cribriform plate and cells of the ethmoid bone. The periosteum of this depressed portion of bone, and the subcutaneous areolar tissue, were stained of a reddish colour, indicating that at some period blood had been effused. The inference, therefore, would be that such phenomenon was the result of external violence. No other lesions, worthy of notice, were detected, until we removed the roof of the cranium, when a very large quantity of turbid fluid was found in the arachnoidean and sub-arachnoidean spaces. The arachnoid membrane was

opaque, from deposition on its surfaces, which were also covered with flocculi of lymph. Upon the upper surface of the fore part of the anterior lobe of the right hemisphere of the cerebrum, there were several dark red spots, apparently the result of extravasated blood in the structure of the pia mater. In other respects the outer surface of the brain looked as though it had been soddened in a fluid. It was of a lightish gray-colour, the grayness apparently resulting from a precipitation upon its surface of that which rendered the fluid, before alluded to, turbid.

We now removed the brain from out the cranial cavity, and in doing so were particularly struck with the large capacity of the right olfactory fossa, and the immense size of the right olfactory bulb, this being enormously distended with fluid, which partly escaped in removing the organ. We next opened the lateral ventricles, which we found to be filled with fluid of a similar character to that existing in the arachnoidean spaces. The plexuses choroides were thickened by interstitial deposition, and by flocculi of lymph on their surfaces. The foramen of communication between the anterior cornua of the right ventricle and the olfactory bulb was very large, as was also the bulb itself, which, as we have before stated, was distended with fluid. The substance of the brain when cut into had a woolly, or perhaps it may be better expressed by the term, a leathery condition. Some of the large blood-vessels in the structure of the brain were distended with blood; not so, however, the smaller ones, as the brain generally was paler than natural. The third and fourth ventricles gave evidence of being similarly distended with fluid, and their plexuses of blood-vessels were thickened from the same cause as those of the lateral ventricles. We next examined the spinal canal, and found the theca vertebralis distended with fluid, which, however, was not so turbid as that found in the cranium. When this was exposed to the atmosphere for a short time, it became partially coagulated.

A peculiarity in the bones of the head still requires to be noticed, as their alteration, consequent upon pressure, indicated that morbid action must have been in existence for a long time—but how long, it is impossible to say. The olfactory fossa, or that portion of the cranial cavity in which the olfactory bulb is lodged, was more than as large again as the opposite one. The cribriform plate had become detached from the neck of the bone, and with the cells was pushed in an upward and outward direction, so as to occupy a part of the frontal sinus. The depressed portion of the

outer table of the frontal bones, before alluded to, pressed upon these ethmoidal cells, the lining membrane of which was much reddened, and also thicker than natural. A portion of the distended olfactory bulb protruded inwardly between the neck of the bone and the detached cribriform plate. This part of the brain, with the mucous membrane of the upper and posterior portion of the nasal passage, which was very much thickened, formed an enlargement that pressed against the septum nasi, to such an extent as to bend it not only into the other nasal passage, but upon the ethmoidal cells of the opposite side, thereby causing a deep concavity on their surfaces. The mucous membrane of the frontal sinus, immediately under the depressed portion of bone and for some distance around, was thickened; and the cavity contained coagulated fibrine, as did also the spaces between the folds of the ethmoidal cells.

It would be very important if we could ascertain the cause which gave rise to these morbid changes, and how long a time had elapsed since they commenced. We would ask—was the injury received on the forehead the primary cause of this disease? How can we understand the horse being in the possession of his owner for six months, and during that time no symptoms having shown themselves so as to indicate disease at any time, with the exception of an occasional cough, and which had passed off previously to his death? Indeed, the owner informed me that the horse was in as fine condition the day before he died as he had ever known him to be. He was five years old off.

EXTENSIVE DEPOSITS OF LYMPH WITHIN AND AROUND THE TRACHEA OF A COW.

By CHARLES DICKENS, M R.C.V.S., Kimbolton.

MY DEAR SIRs,—Professional pressure prevented my doing more than enclose my card with the lower portion of a trachea, which I forwarded to you per rail yesterday, belonging to a cow that I deemed prudent to have killed on Friday last.

You will observe, that the interior of the tube is nearly filled by adhesive lymph, a large mass of which also sur-

rounded the bronchi and enveloped a portion of the right lung, which was consolidated and slightly adhesive to the ribs. About three quarts of fluid were found in the right pleural sac, but none in the left. The left lung was likewise healthy. I regret that I did not determine to forward you more of the diseased parts, until the butcher had proceeded too far in his operations of cutting them up.

The subject of this disease was a very fine short-horn cow, which had been purchased by a friend and client of mine, Mr. Smith, of Risely Grange, at a fair on the 5th of November, having then two months to lie before calving. She was considered to be in perfect health up to the 7th of December, on which day it was noticed that she refused both food and water.

I saw her on the following day, when I found the pulse full and frequent; the breath sweet, but the respiration somewhat difficult; surface of the body warm; nose moist; the bowels slightly relaxed, but an absence of the usual symptoms of pleuro-pneumonia.

I abstracted about two gallons of blood, gave a fever draught, and applied a blister to the throat and along the course of the trachea.

On visiting her the next morning, the symptoms were such, that both her owner and myself agreed upon the propriety of slaughtering her. The rumen was so much distended with gas, as to enforce the necessity of this being quickly done; and as such, I did not introduce the trocar, or give any medicine to neutralize the gaseous matter.

I perhaps should tell you, that at the early part of this year Mr. Smith had several cases of pleuro-pneumonia. Since this time, occasional cases of catarrh and obstinate laryngitis have occurred. These have been associated with enlargement of the parotid glands, a great difficulty of breathing, and much noise in the respiration. They have, however, been somewhat successfully treated by blisters, setons, &c.

I am yours, &c.

To the Editors of the 'Veterinarian.'

[Several specimens analogous to the one forwarded by Mr. Dickens have at different times been sent to the College. Some of these have been accompanied with the lungs of the animal, which, on more than one occasion, have presented the usual appearances seen in cases of pleuro-pneumonia, a fact not without value in determining the cause of the effusion into the trachea and bronchial tubes. A further

peculiarity attaches to these specimens, and which was also the case with Mr. Dickens's, *namely*, that the deposits of lymph which surround the trachea on its outer surface, extend thence to interior of the tube by passing between the extremities of the cartilaginous rings at the superior part of the organ. These deposits thus, of necessity, elevate the lining membrane, which, together with themselves, largely encroaches upon the calibre of the tube and mechanically obstructs the breathing.]

RUPTURE OF THE COLON OF A PONY CAUSED BY EATING THE INTESTINES OF AN OX.

By T. W. GOWING, M.R.C.V.S., London.

It was reported to me on October 18th, 1858, that a pony had eaten what the man called a "set," *namely*, the whole of the small intestines of an ox, in their raw and unprepared state, they not having yet been put through any cleaning process. The fatty matter was also attached to them.

Some time during the night of November 2d, the animal voided portions of the intestines, intermingled with *fæcal* matter. The part expelled was described by the owner to be about fifteen or sixteen inches in length, and in volume about the size of his wrist.

On November 15th, the pony was supposed to have again eaten a quantity of the same kind of matter, as some intestines were missed from the tub wherein they were kept, for the purpose of being prepared for sausages, &c., the man being what is termed a gut-cleaner, or preparer of skins.

On the morning of the 18th, the owner found the animal uneasy, and showing symptoms of colic. He was pawing occasionally, looking round at his flanks, and manifesting great uneasiness. Shortly afterwards he was brought to me, but no allusions were made at that time with reference to what it was supposed the animal had eaten. When I saw him the symptoms did not appear to be very acute; he pawed with his fore feet, and occasionally looked at his flanks, as before described. The pulse also ranged from 50 to 55, and was full in volume. These appearances indicating spasm, arising, as I considered at the time, from indigestion, I ordered a draught to be immediately given, composed of

Tinct. Opii, Spt. Æther. Nit., and Sol. Aloës.

Between two and three o'clock the owner sent word to

say the animal was no better, and that he was very much blown. I prescribed the following:

℞ Tinct. Assafœtidæ, ℥ij;
Ol. Lini, ℥xij;
Tinct. Opii, ℥iss. Fiat haustus.

I likewise ordered injections to be thrown up occasionally. My patient was seen again between eight and night o'clock in the evening, when he was evidently worse. He had been up and down frequently. Tympanitis to a considerable extent existed. The bowels had not responded to the medicine, nor had any fæces been passed with the injections. The pulse had now become quick and weak, and increased to between 60 and 70 beats in the minute. I ordered the former draught to be repeated, adding a drachm of calomel, and requested the proprietor to have the animal watched during the night.

November 19th.—The patient is considerably weaker. He has not partaken of anything during the night, excepting a little gruel, with which he was drenched. There is still no action upon the bowels, and they are quite as tympanitic as before.

℞ Tinct. Assafœtidæ, ℥ij;
Ol. Lini, ℥x;
Calomel, ℥ss.

Two o'clock p.m.—The pulse has become almost imperceptible, and the animal is evidently sinking. Discontinued treatment. He died during the night.

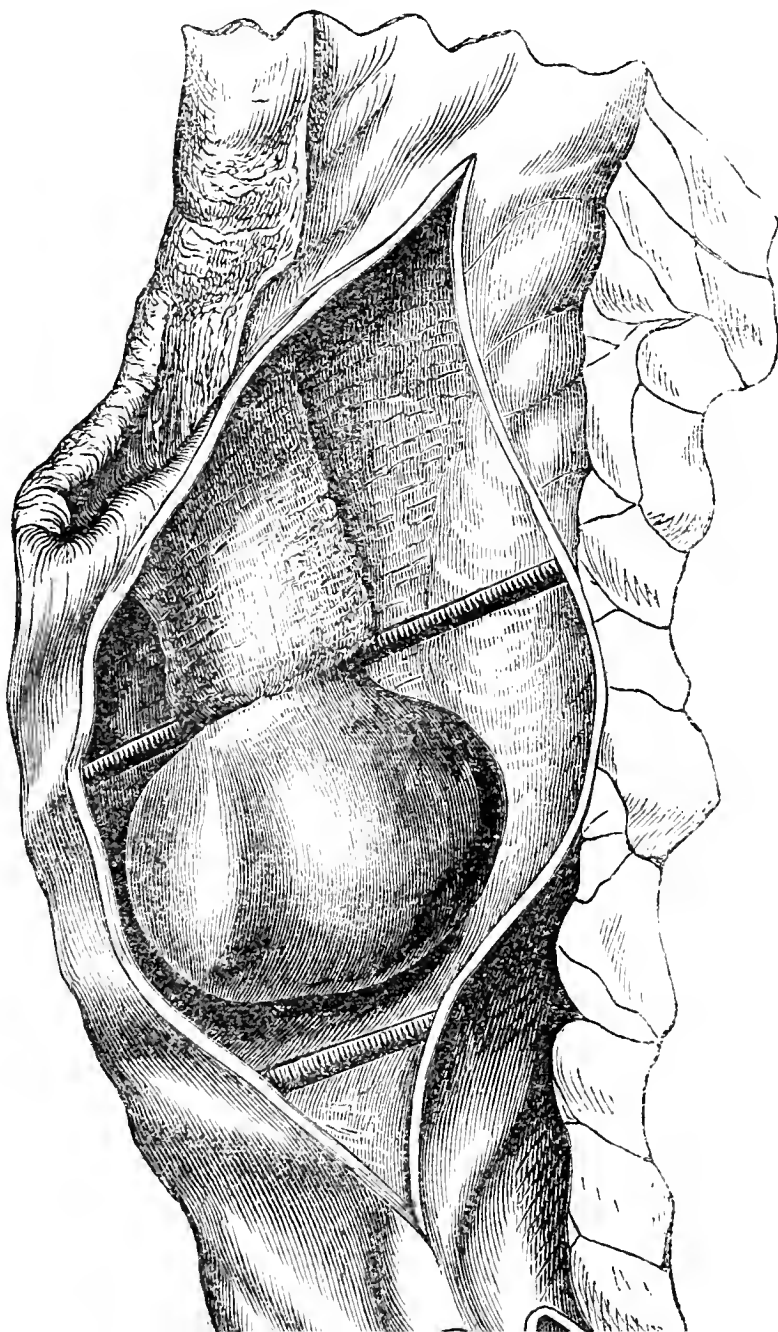
Upon making a post-mortem examination on the following morning, the single colon was found to be ruptured in three places, to the extent of about two or three inches in each place. The intestines that had been eaten formed an impactment of considerable size within the bowel. These lesions fully accounted for all the previous symptoms and death.

TUMOUR ATTACHED TO THE MUCOUS COAT OF THE ILEUM OF A HORSE. *With a Woodcut.*

By J. WOODGER, M.R.C.V.S., London.

THE subject of this case was an aged, brown gelding, the property of the London General Omnibus Company, which, in consequence of a severe attack of colic, was sent to my infirmary on the 16th of November last. I learned that the horse had eaten his usual quantity of corn in the morning, and appeared also to be in perfect health till about 9 o'clock, when he suddenly gave indications of being griped. An

antispasmodic draught was administered, but as this failed to afford relief, he was, as stated, sent to the infirmary. When admitted, I was on my professional rounds, and my servant, in consequence of my absence, lost no time in exhibiting another antispasmodic mixture. On my return, I found the animal in a condition which left but little hope of his recovery. The extremities were cold; the body covered with profuse perspirations; the pulse imperceptible at the jaw, and the pain continuous, associated with a great disposition to roll upon and lie on his back. An oleaginous aperient was now given, enemata thrown up, and a mustard cataplasm applied to the abdomen. In the after part of the day, as no abatement in the severity of the symptoms had taken place, hot rugs were applied to the body, tobacco enemata exhibited, and a blood-letting ventured upon. With some difficulty a few pounds of blood were abstracted, which, together with the other remedial means employed, seemed to afford relief for about half an hour. The pain, however, now returned with increased severity, and notwithstanding all our efforts he gradually became worse, and



which it will be seen that a pedunculated tumour exists within the ileum, producing occlusion of the bowel. The tumour had a flesh-like appearance, and its globular portion was covered with a membrane somewhat analogous to the true mucous membrane. By its weight it had drawn in a portion of the ileum, which thereby formed its pedicle, and which extended as far as the part occupied by the upper transverse rod in the engraving. To this place the normal mucous membrane could be traced. All the surrounding tissues were infiltrated with blood.

ON CASTRATION OF MULES IN THE CRIMEA, BY "SCRAPING" THE CORD.

By T. PATON, V.S., Military Train.

IN the Crimea, during the latter part of 1855, it was found necessary to perform the operation of castration on about one hundred and twenty mules, whose impatience of control and vice evidently arose from their inordinate sensuality—sexuality it could not be called, for these hybrids seem not to distinguish the sex, or if so it seems to make no difference. The animals being under the care of several veterinary surgeons, a council was held, at which it was resolved that they should be brought to a central place convenient for the operation, and after-treatment. At the suggestion of Veterinary Surgeon Gloag, of the 11th Hussars, the "scraping" operation was determined on as an experiment.

It is for the information of those of your readers who may be unacquainted with this mode of operating, and its results, that I am induced to send you this paper.

The animals were all of mature age, *i. e.*, five years and upwards, in hard condition, well fed, and totally unprepared by physic or diet. The heat was intense; so much so, that during the period I was operating upon about the sixteenth animal, I received a *coup de soleil*, which ended in fever, confining me for a month. I mention this fact, as I do not remember the exact degree of heat indicated by the thermometer at the time.

Operation.—Having cast the animal by means of ropes, and placed him in a convenient position, the testicle was firmly grasped in the left hand, between the thumb and forefinger,

thus tightening the scrotal covering, through which an incision was made by an ordinary knife, and the testicle liberated. The vas deferens was then cut, and the remaining portion of the cord laid along the thigh. This being made tense by a slight pull at the testicle, the cord was gently, gradually, yet rapidly scraped along its length with a knife having a rough, not sharp, edge, till it separated, when the abraded ends of the vessels were found to contract. If the operation is skilfully performed, there is little more hæmorrhage than stains the knife.

The same process was of course repeated with the other testicle.

After the operation, a bucket of water was dashed over the parts, and the animals placed in a shed.

The after-treatment was conducted by Veterinary Surgeon Death, who assured me that healthy suppuration and healing soon followed, and that the animals were all at their duty in the usual time.

The operation was shown to us by Veterinary Surgeon Chambers, of the 4th Dragoon Guards, and was eminently successful on this occasion; upwards of one hundred and twenty animals being operated upon by different individuals, and under all the disadvantages of maturity, temperature, and high feeding, without a single casualty which could be rightly traced to the operation. Two of the animals died of glanders in about a week after the operation, but this was not above the ordinary per-centage of mortality from that disease during this campaign of exposure and privation.

REMARKS ON "USING A GLANDERED HORSE IN A PUBLIC VEHICLE."

By T. A. DOLLAR, V.S.

VETERINARY ESTABLISHMENT,
8, BULSTRODE MEWS, MARYLEBONE LANE,
OXFORD STREET; Jan. 15, 1859.

GENTLEMEN,—I enclose you the following particulars of the case which appears in the *Veterinarian* of this month, under the head of "Veterinary Jurisprudence," feeling satisfied that they will not be wholly uninteresting to your readers; and as the decision of the police court (until the whole history of the case is before the public) is damaging to my

professional reputation, I hope you will have the kindness to give it a place in your next number.

I am, gentlemen,

Your obedient servant,

THOMAS A. DOLLAR.

To the Editors of the 'Veterinarian.'

On the 3d of August last my attention was called to the bay horse in question, the horsekeeper complaining of his not feeding or drinking freely, and coughing.

On examination, I found the horse had sore throat, with enlargement of the submaxillary and parotid glands, and a certain amount of fever. I had him stopped from working, his throat stimulated, gave him a fever drink, and ordered linseed and bran mashes; repeated the same treatment on the following day, and on the 5th found that the fever and soreness of the throat had disappeared; the horse had regained his usual appetite and spirits, but was discharging slightly at both nostrils. Next day I considered him fit to go out to work, which he did for a few hours per day up to the 11th, the discharge still continuing, but the horse feeding well, doing his work freely, and in good style. On that day, when the driver brought him home, he reported that a policeman had stopped him in the street, on account of the discharge at his nose. My attention was particularly directed to the horse next day, to give the owner my opinion as to whether I considered the horse fit to work, and if I would advise his being continued at work. As there was no constitutional derangement, the horse feeding well, and in first-rate working condition, I was of opinion that he was fit for work, and ought to be continued at it. The owner, however, from the great trouble and annoyance she had been subjected to on previous occasions, was afraid to send the horse to work; and, contrary to my advice, had him sent out to grass. Where the horse was turned out the pasture was very bare, and a bad supply of water, so that he lost flesh very soon, and the discharge still continued. When he was brought from grass at the end of five weeks to be shown to the magistrate, he was still discharging at both nostrils, had considerable enlargement of the submaxillary and parotid glands, and likewise (in addition) abrasions of the mucous membrane of both nasal cavities. These were the appearances presented on the 25th of September, when examined by Mr. Arthur Cherry, Veterinary Surgeon to the Police, and Professor Varnell, who both pronounced him badly glandered, and in their opinion he ought to be immediately destroyed. I examined the horse on the same day,

and was of opinion that he was not glandered, but had simply catarrhal gleet, and that a few weeks' treatment would restore the animal to perfect health and usefulness. My reasons for forming that opinion were the following :

1st. The discharge had neither the colour nor consistency that is presented in a case of glanders ; it was white and friable.

2d. The abrasions of the mucous membrane presented none of the characteristics of the ulcer found in a case of glanders.

3d. The mucous membrane, where not abraded, presented nearly a natural colour ; no approach to that leaden hue, striated with a bluish-red, so characteristic of glanders.

4th. The enlargement of the submaxillary glands had not that hard, sitfast feeling always present in a case of glanders.

The evidence which satisfied the magistrate did not convince the owner, for she had the horse put under my care for treatment. I had him under the following treatment for a month, viz. : generous diet, tonics, the insertion of a seton in the submaxillary space, and syringing the nasal cavities with a weak solution of sulphate of zinc. After a few days' treatment the discharge began to diminish, and the abrasions to heal. At the end of the third week the abrasions were quite healed, and the discharge very trifling ; the horse had considerably improved in condition. At the end of the fourth week the discharge had apparently ceased, and the enlargement of the submaxillary glands very much diminished. I had him sent to gentle work. There was a slight discharge from both nostrils while at work, for the first week, but that entirely disappeared. After he had been doing gentle work for about three weeks I had him sent to Mr. Field, veterinary surgeon, 224, Oxford Street, for examination as to whether he was glandered or not, when I received the following :

“ Nov. 17th, 1858.

“ This is to certify that I have this day examined a bay gelding sent here by Mr. Dollar, and am of opinion that the said gelding is not suffering from a disease called *glanders*. The horse is now in good condition.

(Signed) “ JOHN FIELD, Veterinary Surgeon.”

Messrs. Coleman and Field examined the horse on the 18th of November, and gave the following certificate :

“ VETERINARY ESTABLISHMENT,
41, LITTLE MOORFIELDS, FINSBURY.

“ This is to certify that we have this, the 18th day of November, examined a bay gelding, at the request of

Mr. Dollar, V.S. We are of opinion that the said horse is free from glanders, in good condition, and fit for any ordinary work.

(Signed) "COLEMAN and FIELD,
"Veterinary Surgeons."

Mr. John Dollar examined him on the same day, and gave the following certificate:

"VETERINARY ESTABLISHMENT,
CASTLE STREET, FINSBURY,
Nov. 18th, 1858.

"I hereby certify that I have this day examined a bay horse, at the request of Mr. Thos. A. Dollar, and am of opinion that the said horse is decidedly free from the disease termed glanders, and is in good working condition.

(Signed) "JOHN DOLLAR, Veterinary Surgeon."*

From that time up to the present he has been doing regular work in one of the Westminster omnibuses.

On the 11th of this month I had him again examined by Mr. Field, Messrs. Coleman and Field, and Mr. J. Dollar, who all confirmed their opinions, as stated in their previous certificates, that the horse was not glandered, and was in good working condition.

On the 12th inst. I had him sent for examination to the Messrs. Mavor, and received the following certificate:

"INFIRMARY FOR HORSES,
77, PARK STREET, GROSVENOR SQUARE,
LONDON; Jan. 12th, 1859.

"I hereby certify that I have this day examined, at the request of Mr. Dollar, a bay gelding, with a view to forming an opinion as to whether he is or is not affected with glanders, and am of opinion that the said gelding is not affected with that disease. I observe, however, the old cicatrices of ulceration of the Schneiderian membrane of both nasal cavities, and thickening of the integuments in the submaxillary space, apparently the result of treatment for glandular enlargement.

(Signed) "W. MAJOR, V.S., M.R.C.V.S."

The following veterinary surgeons have also at various times examined the horse, and given certificates that he is

* [Following the words "Veterinary Surgeon," in Mr. John Dollar's certificate, were the letters "M.R.C.V.S.," which we have erased, as on reference to the published Register of the Royal College of Veterinary Surgeons, we did not find his name; and also on application to the Registrar, we were informed that Mr. Dollar had no right to the title which these initials express, not having graduated at the College.]

not glandered, is in good condition, and fit for work : Mr. G. Williams, Mr. Philip Hempson, Mr. W. H. Kent, Mr. B. Simmonds, and Mr. R. Vines.

That Professor Varnell might have an opportunity of examining him without suspecting he was the horse he had condemned for glanders, and ought, in his opinion on the 25th of September, to be immediately destroyed, I had him presented for examination through Mr. E. Martin, corn merchant, who received the following certificate :

“ ROYAL VETERINARY COLLEGE,
GREAT COLLEGE STREET,
CAMDEN TOWN ;
Jan. 14th, 1859.

“ I certify that I have examined a brown horse for Mr. E. Martin, and find that he is unsound from bone spavin on the off hock, attended with lameness ; he is blind of the near eye ; he makes a noise in his breathing termed roaring, and there are scars on the septum of the nasal passages, and also an enlargement of the submaxillary glands. I further notice that his hoofs before are brittle and shelly.

(Signed) “ G. VARNELL, Assistant-Professor.”

I may in conclusion add, that the horse is open to the inspection of the public on application to me. He may be seen in one of the Westminster omnibuses, while at work, from 11 to 2 o'clock every day.

LETTER FROM ASSISTANT-PROFESSOR VARNELL, RELATING TO THE ABOVE COMMUNICATION.

GENTLEMEN,—Allow me to thank you for your kindness in placing in my hands a communication you have received from Mr. Dollar, V.S., respecting a horse examined by me in September last, and which I then pronounced to be glandered, adding that, in my opinion, he ought at once to be destroyed.

At the time mentioned I examined a *brown* horse, low in condition, at the request of a police magistrate, and from the symptoms I observed, I had every reason to believe that the animal was glandered, and gave a certificate to that effect. Upon this, it appears, the magistrate acted ; and if the decision should have proved injurious to Mr. Dollar, I can only express my regret ; it was, however, an act of a public officer, over which I could have no control. My opinion was an unbiassed one, and given with candour ;

and therefore, I would ask, of what has Mr. Dollar to complain? Does he wish to bend others to his views, be they right or wrong? Suppose the verdict had been the opposite to what it was, should I have thought the decision of the magistrate, or Mr. Dollar's statement, likely to injure my reputation? Certainly not; I should have considered that both had acted conscientiously. Notwithstanding my opinion, it appears that the horse was returned to the owner instead of being destroyed; and I think that from Mr. Dollar not considering the case to be one of glanders, he was warranted in having recourse to the treatment of the animal; and supposing, as is now alleged, that thereby he was relieved, I should have been pleased to have been made acquainted with the fact, and especially if, at the end of a year, or a year and a half, not two or three months, I should have been convinced by a re-examination that a cure had been effected, I should have given credit to Mr. Dollar.

This seems to me to be something like the course which, as veterinary surgeons, we ought to take one with the other. Instead of this, what does Mr. Dollar do? why he takes a horse, and, as he says—the one I examined in September, 1858—to several veterinary surgeons, who give certificates that the horse is not affected with glanders, and in good condition. None of them, however, with the exception of Mr. Mavor, says anything about the existence of numerous *cicatrices* on each side of the *septum nasi*, and of a thickening of the tissues between the branches of the lower jaw.

Now I would ask, What is all this trouble taken for? Is it that Mr. Dollar has no faith in his own judgment as to whether the horse is cured or not? or is it a mode he has preferred to adopt to increase his popularity, and that too at the expense of others?

To say the least, it is certainly most unprofessional; but compared with the after proceeding it is nothing. I feel ashamed to acknowledge that there are those who can act in a clandestine way, to obtain their objects. Such has been Mr. Dollar's conduct in sending a horse to the College for examination in the name of another person; and this not the owner, as I am informed, but some one who was weak enough to allow himself to be made a tool of.

The following particulars relate to the examination of a bay horse sent to the College for general examination on the 14th January, 1859, by Mr. Martin.

On asking the man who came with the horse to whom he belonged, he replied, to his master, and that his master's name was Martin. Further, that his occupation was that of

a corn-chandler; and he wished the horse to be examined before he purchased him, as he was doubtful of his being sound, particularly in his wind. I looked at the animal, and was not aware that I had ever seen him before. I then examined him in the usual way, and wrote Mr. Martin a certificate, a copy of which appears in Mr. Dollar's communication.

Thinking I had written quite sufficient to deter Mr. Martin from purchasing the horse, I did not state in the certificate that which I mentioned verbally to the man, before he left the College. I asked him—"Has your master paid for the horse?" He replied—"No, I think not, as he wished to know if he was sound." I then said—"Tell your master not to have anything to do with him, for most likely the horse is *glandered*." This message I repeated two or three times to the man, and it was heard by those persons who were near me at the time. I therefore considered it (as the man seemed trustworthy and middle-aged) quite as valuable as though I had named it in the certificate.

I may further add that the horse was old, a decided whistler, or what many would call a *roarer*. His breathing was also short, and he had a peculiar cough, strongly indicative of tubercles in his lungs—a condition of these organs I have never found to be absent in horses that have been destroyed for being glandered.

With reference to *the* horse I examined in September, 1858, sent by the police magistrate, I am of an opinion that, if he is now living, he is affected with *chronic glanders*, and if so, it is not impossible that many others may, through him, have contracted this fearful disease. Should the horse sent on the 14th inst., be the same as seen by me in September, 1858, and which of course is possible, the opinion then given of his being affected with glanders, *and ought at once to be destroyed*, is supported by my second examination.

The inexperienced should be very careful in the giving of opinions in such cases, and the public should also be put on their guard in receiving statements from those who are endeavouring to render themselves thus popular: such popularity, however, is sure to be of short duration.

Messrs. Editors, I am aware that it is unusual for such a lengthy communication as this to appear in the pages of your journal, as a comment upon the proceedings of others, nevertheless I shall feel obliged by your allowing space for this letter.

I am, &c.,
G. VARNELL.

To the Editors of 'The Veterinarian.'

Facts and Observations.

INOCULATION WITH DIPHTHERITIC EXUDATION.

DR. HARLEY, at a recent meeting of the Pathological Society, exhibited specimens of the fauces, larynx, and trachea of a dog that had been inoculated with diphtheritic exudation.

Dr. Harley, while showing the above-mentioned specimens to the society, said that he had inoculated five animals with the exudation taken from the fauces of a woman aged 23 (one of Dr. Walshe's patients in University College Hospital), supposed to be labouring under an attack of diphtheria. The experiments were performed as follows: 1st. As children are specially liable to be attacked with diseases accompanied with membraniform deposits, such as croup, for example, two young pups were selected for experiment. 2d. As badly nourished, sickly individuals are believed to be favorable subjects for diphtheria, a sickly, ill-fed, full-grown dog was procured. 3d. A perfectly healthy adult dog: and 4thly, as the foregoing were all warm-blooded animals, and Dr. Harley wished to make the experiment as complete as circumstances would permit of, a snake, which is a cold-blooded animal, was also employed. Some of the membrane carefully removed from the fauces of the woman, together with some of the yellowish coloured mucus secreted by the denuded surface of the pharynx, which was found on microscopical examination to contain all the cell-elements of the perfectly formed membrane, was collected in watch-glasses, and carefully excluded from the action of the atmosphere. The fauces and pharynx of each of the four dogs were now scarified, and while two of them had the abraded surfaces well rubbed over with the diphtheritic membrane, the other two were in a similar manner inoculated with the yellow mucus. The snake, on the other hand, was inoculated on the back of the neck. Twenty-four hours after the performance of the operations, the two pups were killed and examined; but nothing was detected save the marks of scarification. Four days later the sickly dog died, and on examination no change was found to have taken place about the throat, except that a small ulcer had formed on the centre, and towards the posterior part or the fauces. This ulcer, Dr. Harley said, was not covered with anything resembling a diphtheritic exudation; but only presented the usual appearances of an

ordinary ulcer of the mouth, and had most probably resulted from the force employed in rubbing in the matter. The other dog, as well as the snake, were both quite well seven days after the operations.—*Medical Times*.

PUMPKIN SEEDS IN TÆNIA.

M. CAZIN adds an additional one to the numerous cases on record in which the tænia was expelled by the use of pumpkin seeds. A delicate child, 5 years of age, took the medicine (the bruised seeds and sugar āā ʒvii½.) for two mornings in succession. The cure was completed by bitters and iron.—*Gaz. des Hôp.*, No. 135.

STATISTICS OF THE NUMBER OF HORSES.

THE *Farmer's Magazine* in an article on "THE USES OF THE HORSE," states that in the United Kingdom, we have of horses, of all kinds, probably about 2,250,000 at the present time; and, estimating them one with the other at £15 all round, this would give a total value of nearly £34,000,000. Prussia has nearly as many; but of many of the European states we have no definite accounts.

Russia, however, is the country for horses, and numbers at least 18,000,000 or 20,000,000. In the United States there are about 5,000,000 horses and mules, and about 1,500 of each are annually shipped.

PRIZE ESSAY ON FOOD.

THE sum of £100 has been placed at the disposal of the council of the Society of Arts by Sir Walter C. Trevelyan, as a prize to be awarded for the best essay on the applications of the marine algæ and their products as food or medicine for man and domestic animals, or for dyeing and other manufacturing purposes. Competitors are alone eligible who form the results of their own original observations, together with a series of specimens illustrative of the best methods of collecting, preserving, and preparing the several species. The essays, with the accompanying specimens, must be sent to the society by the 31st of December, 1860.—*Lancet*.

THE CUMULATION AND TOLERATION OF MEDICINES.

DR. HEADLAND, writing on 'Neurotics,' says that in the action of "colchicum, aconite, digitalis, and other nerve-medicines, there are two peculiarities which are worthy of remark. They are called *cumulation* and *toleration*.

"Some quantity of the medicine may often be given, in repeated doses for some time together, without any apparent result. It seems to remain in the blood, and to become accumulated or stored up there. But all on a sudden it breaks out, appearing to be discharged on the nerves, and may produce very dangerous symptoms. This *cumulative* action is especially observed of digitalis, and therefore considerable care is required in the exhibition of that medicine. This medicine is a special sedative. In other cases we find that the nervous system becomes by degrees inured to the effect of a particular medicine, and suffers less by its presence than it did at first. This is called *toleration*. It is particularly observed of colchicum and of antimony, and of all medicines which act on the vagus nerve so as to cause vomiting."

ELAND MEAT.—A NEW ARTICLE OF FOOD.

THE attention of the public has just been called by Professor Owen to the circumstance that the flesh of the eland (*Antilope Oreas* of PALLAS), constitutes a new and excellent article of food. The late Earl of Derby first imported the eland into England, and at his death a small herd, which he had formed, were bequeathed to the Zoological Society of London. Since then, in consequence of an increase of their number, attempts have been made to acclimatize and diffuse these beautiful animals, and Professor Owen says in his letter to the *Times*, that "Viscount Hill has had such success with the pair which was introduced into his park at Hawkstone, near Shrewsbury, that his lordship determined to make the experiment, and fatten a young male for the table. The result now communicated was obtained from a joint answering to the 'short ribs' of beef, with which the writer was liberally favoured by Lord Hill. The meat was of a bright colour and of a close, fine texture, but without any fat mixed with the lean. A good quantity of fat was accumulated round the kidneys and upon the inside of the ribs. After

hanging ten days the joint was simply roasted, with a part of the loin-fat or suet, another part of this being made into a suet pudding. The meat when brought to table and carved presented the colour of pork. Committee unanimous as to its texture—the finest, closest, most tender, and masticable of any meat. In taste, the first impression was of its sweetness and goodness, without any strongly marked especiality of flavour; it was compared with veal, with capon; finally, the suggestion that it was (*mammalian*) meat, with a *soupçon* of pheasant flavour, was generally accepted. Committee unanimous that a six-year-old eland would most probably yield a meat equally fine in texture, with a more marked and distinctive flavour; and that the extreme delicacy of flavour might be due to the immaturity of the present animal. The portion of fat served with the joint differed from that of deer in not rapidly condensing into tallow, but retaining, like the best beef fat, its clear melting character; it was perfection as fat. Suet pudding extremely light and delicate. And, on the whole, the committee rose with the conviction that a new and superior kind of animal food had been added to the restricted choice from the mammalian class at present available in Europe.”

Extracts from British and Foreign Journals.

ON THE PRODUCTION AND SOURCES OF ANIMAL HEAT AND MOTION.

Read before the Utica 'Medical Club,' Oct. 1, 1858.

By Prof. A. S. COPEMAN, V.S., Utica, New York.

ON introducing the topic proposed for discussion this evening, feeling, as I do, a strong conviction that there still exists in the minds of many intelligent men a somewhat vague or indefinite idea respecting the laws of the phenomena of *vital heat* and *force*, I beg to call attention to the following propositions:

1. It is incompatible with a sound judgment to believe that a something can come of or to nothing.

2. All matter and all force are indestructable; that under the present dispensations of Providence not a single atom of matter, not a *wave* or a *line* of force is ever created or lost.

3. The source of vital force in the vegetable kingdom is found in the sun's rays; whilst the *organ* of all vital phenomena in animals is found in the mutual action of *oxygen* and the *elements of their food*.

4. All truly vital operations of the animal, as well as the vegetable organism, are performed by the agency of *untransformed cells*: disintegration of the cell is one essential condition or source of its action, and the amount of vital action which each cell can perform is limited; hence it is now generally held that the essential organic form, the acting living organism, is the cell—the complex organism only supply the conditions requisite for the vital operations. For example, the liver and kidneys, by the peculiar arrangement of their tissues, simply supply the conditions by which the cells perform their functions.

The manifestations of the vital force are dependent on a fixed composition of the substances of the living tissues by which they act, which enables these to *resist* the changes that external agencies tend to produce. The vital force does not act, like the magnetic force, at infinite distances, but, like chemical force, it is active only in the case of immediate contact; its manifestations are also dependent on a certain temperature.

Abstraction of heat, or expenditure of force of living parts, weaken their resistance to the chemical action of oxygen; thus, if we lower the temperature of the skin, oxygen instantly decomposes the fatty matters of certain cells, converting them into carbonic acid and water, setting their vital force at liberty as radiant heat. Each cell also performs a definite function, generates force of a definite character; the cells of the brain generate mind (brain-force), those of the muscles, motor power (muscle-force.)

All phenomena of vitality are phenomena of motion. If I may be permitted to imagine a starting point of motion, and assume that a thought excited by light or sound (phenomena of motion) causes a change in certain cells of the brain, which enables oxygen to decompose their contents and set free a force (brain-force), this passes as a *wave* along the spinal cord to special conductors, the nerves; this nerve-force excites a change in the muscle-cells, and oxygen decomposes them, producing the phenomena of muscular motion (muscle-force); the cells lose their vital properties, their character of life, and separate from the living part; but, to continue, the muscles act upon the tendons and bones, imparting motion to the limbs, and liberating the force as heat, which now takes its leave of the living body, and returns to the "outer world" from whence it came.

If it is admitted that the muscle-cells cannot generate heat without producing muscular motion (voluntary or involuntary), then it is certain there must exist in the majority, if not in all animals, some other source of animal heat. The great bulk of the human frame consists of voluntary muscles, and these, in order to furnish the heat of the body (98°), would be kept in constant motion, for all force in the living organism must do its work the instant it is liberated.

In cases of paralysis, the metamorphosis of the voluntary muscles is for a time suspended. Yet it is stated by M. Chossat that the temperature of paralysed limbs is but slightly lower than that of sound limbs. Professor Dunglison also states, that notwithstanding the usual depression of the thermometer in the neuroplegic side, it is not unfrequently found to be more elevated than in the sound side. I have "neurotomized" more than fifty horses, but never observed any want of heat in the *unnerved* foot.

I believe there now exists but little difference of opinion among physiologists respecting the uses of the fatty compounds which form so large a per-centage of the food of the herbivorous animals; all agree they are converted (somewhere) into carbonic acid and water, with the liberation of heat; but I fail to find, in the writings of any one, how or where this metamorphosis is performed; no tissue, no special cells, has yet been assigned for this important, ever-active function.

No physiologist will contend that heat is generated by the bones, the ligaments, or the tendons; the contraction of a muscle we know must produce heat, but I am speaking of *heat without muscular motion*. The nerves are conductors of force, not of heat; heat cannot be derived from the brain, for in death from starvation the nervous centres scarcely exhibit any diminution in weight; it cannot be generated in the blood-vessels, for it is now generally held that the essential acting living organism is the *untransformed cell*. The only cells in blood (the corpuscles) are charged with oxygen—in fact, we may truly say, healthy blood is *saturated* with this element.

I must here beg to conduct you as short a distance as possible over the uninviting field of minute anatomy. Examined by the aid of the microscope, and magnified five hundred diameters, a perpendicular section of the human skin presents the beautiful structure seen in this drawing*

The drawing illustrating this subject will be found at p. 247 of Carpenter's 'Principles of Human Physiology,' fifth American edition; also in Kölliker's 'Microscopical Anatomy,' p 140; and in Griffith and Henfrey's 'Micrographic Dictionary,' p. 580.

the *cutis* may be truly said to rest upon a bed of fatty tissue (*paniculus adiposus*); the upper surface of the areolar tissue of the *cutis* is thrown into papillæ, covered with elongated perpendicular cells, forming the deeper layer of the *rete Malpighii*; the cells above these are roundish, and those nearest the cuticle becoming longer, horizontally flattened from mutual pressure. The cells of the cuticle are colourless, flattened, often wrinkled or folded. All the cells of the *rete Malpighii* agree in essential points in their structure, and are nucleated vesicles distended with fluid. The contents are finely granulated, with more or less clearly defined granules, which invariably diminish in number in the more external cells; they also yield fat when boiled in concentrated solution of caustic potassa (Kölliker); The skin is abundantly supplied with fatty matters, whilst the large quantity of blood in the endless folds of the capillaries presents a constant source of oxygen; here then every condition is fulfilled requisite for the production of *heat*. The rapid growth of the epidermis, the hair, and the nails, must not be forgotten. A new nail is formed on the thumb in twenty weeks. Hairs of the beard, shaved every twenty-four hours, grow at the rate of $5\frac{1}{2}$ inches per annum (Berthold). The epidermis, hair, and nails, all consist of *epithelial scales*, and since these *scales* are but membranes, or the mere walls of the *Malpighian cells*, I beg to ask the physiologist what becomes of the cells' contents? After long and careful examination of this subject, it is my humble opinion that the cells of the *rete Malpighii* are the seat of an extraordinary rapid metamorphosis which generate heat—in fact, they are the main source of animal heat.

The labours of the eminent physiologists, Matteucci and Brown-Séquard, have recently established a new fact in physiology, viz., the existence of “muscular respiration.” May we not have a “*cutaneous respiration*?”

In conclusion, as the term cutaneous respiration may lead to error, I wish it distinctly understood that all oxygen employed for this and every other vital phenomenon in the animal organism can only enter it through the lungs. Again, that the vital force of the untransformed cells *resists the action of oxygen* until their normal temperature is disturbed or lost; the cooling of the skin by the atmosphere enables oxygen to effect the metamorphosis of the cells, if the *rete Malpighii* generate heat, and thus maintain the natural temperature of the skin.—*Spirit of the Times*.

OBSERVATIONS ON THE RECENTLY INTRODUCED
MANUFACTURED FOODS FOR AGRICULTURAL STOCK.

By J. B. LAWES, F.R.S.

IN common with other agriculturists, I have been invited, by advertisements in the papers, by placards on the walls, and by circulars containing numerous testimonials from distinguished persons, to employ certain manufactured foods in the feeding of the animals on my farm. These foods frequently cost from 40s. to 50s. per cwt. Taking, for those for which it is given, the published average prices for the six weeks ending July 17th, 1 cwt. of the following stock foods would cost as under :

	s.	d.
1 cwt. Barley	8	4
„ Oats	9	2
„ Beans	9	4
„ Peas	9	6
„ Lentils	10	0
„ Oilcake	10	0
„ Linseed	16	6
„ Hay	4	0

The manufactured foods thus cost, weight for weight, four or five times as much as the most nutritive of the ordinary stock foods on our farms.* Very undeniable evidence of the superiority of the former should therefore be required to induce the farmer extensively to employ them. But it is rather strange that among the numerous testimonials in general terms, no evidence based upon exact comparative experiment, showing actual weights of food consumed and increase in live weight obtained, has been brought forward in favour of these costly foods ; nor does a reference to the circulars give much insight into their composition.

We do, however, in one circular find the report of a professor of chemistry, stating that the food sent to him for analysis contained, besides nitrogenous and mineral matters, upwards of 50 per cent. of respiratory matter. It is further added, that if given to cattle in the proportions stated in the prospectus, they *must thrive*. In reference to the above statement of composition, it may be observed that it would apply almost equally well to any of the substances,

* Of course the relation will vary with the market prices ; but the prices per cwt. can at any time be easily calculated for the purpose of the comparison.

except the hay, in the foregoing list of ordinary foods, which cost only about one fourth or one fifth as much.

The following is the result of an analysis in the Rothamsted laboratory, by Mr. Segelcke, of one of these foods. A practical trial of the same food will be noticed further on.

Water	12.86
Nitrogenous substance	15.51*
Fatty matter	6.22
Starch, sugar, &c.	55.97
Woody fibre	5.50
Mineral matter	3.94
	<hr/>
	100.00

Independently of the slight colouring with turmeric, and flavouring with cumin, anise, or other of the stimulating and carminative seeds used in cattle-medicine, which these foods frequently exhibit, the constituents as here stated could be supplied by a mixture of barley-meal with some of the leguminous seeds enumerated, and oilcake or linseed. Such a mixture, according to the prices quoted, could be prepared for about one fourth the price of the manufactured cattle-food.

These foods are recommended to be used in comparatively small proportion to the total food consumed. The animals have, therefore, still to rely for the bulk of their nourishment upon ordinary food; and it is stated that, with the use of these manufactured foods, the quantity of corn may be reduced to about one half; and that coarse and comparatively innutritious matters, such as bran and chopped straw, will, by the admixture, be rendered palatable and nutritious.

Now, bran and chopped straw contain a large proportion of woody fibre, which, though required for bulk by the ruminant animals, passes through their bodies in a finely-divided state, but otherwise almost unchanged. More or less of the soluble matters are extracted from such food during its passage; but no evidence has been brought forward to show that these manufactured foods will so stimulate digestion as either to extract more of its already-existing nutritious matters, or to render the woody fibre itself, of the coarse foods mentioned, more directly serviceable to the nourishment of the animals.

All animals require in their daily food a given amount of digestible and convertible constituents, such as starch, sugar, pectine, gum, oil, nitrogenous compounds, and certain mineral matters. The proper amount of some or all of these *must*

* Nitrogen 2.45 per cent.

be contained in the food supplied ; and no stimulant, or any other device, can substitute that necessary amount, if the animal is not to decrease in weight. If, on the other hand, the animal be required to increase in weight, as in the case of our growing and feeding stock, an additional amount of digestible and assimilable constituents is required beyond that which, under otherwise equal circumstances, would keep the animal at a fixed weight. In fact, no stimulus whatever can substitute the supply of the digestible and assimilable constituents in the food, whether it be required for the purposes of labour, or of increase in weight. In other words, the waste of matter in the body by respiration and perspiration, the loss by urine and fæces, and the gain in weight of fat, flesh, bone, &c., must all come from constituents *actually contained in the food*.

Some years ago an extensive series of experiments was conducted, at Rothamsted, on the feeding of oxen, sheep, and pigs, most of the results of which have been published, either in the 'Journal of the Royal Agricultural Society of England,' or in the 'Reports of the British Association for the Advancement of Science.' These experiments showed how much the character and productiveness of the foods employed depended upon the amounts they supplied of certain digestible *non-nitrogenous* substances—such as starch, sugar, fatty matter, &c.; certain *nitrogenous* substances—such as albumen, &c.; and certain *mineral* matters. It was further found that the ordinary, or staple foods, when in proper admixture with one another, supplied the several constituents far more economically than when mixtures were attempted to be made, in which some of the constituents (starch, sugar, or oil, for instance) were employed in a comparatively pure state, that is, after having undergone an expensive process of manufacture in their preparation. Indeed, unless fresh and cheaper sources of food can be discovered, so that we can be supplied with starch, sugar, oil, &c., at a cheaper rate than they are provided in hay, corn, oilcake, and the like, we cannot hope economically to replace the latter by special manufactured foods for stock.

It may be asked—if we can with advantage employ concentrated manufactured manures for our crops, why cannot we also economically employ concentrated manufactured foods for our stock? The answer is plain. In using the concentrated manufactured manure, containing a certain amount of nitrogen or phosphates, for example, the bulk of the crop is obtained from *other sources*—such as the *atmosphere and water*, not supplied by the farmer's hand; the

natural constituents existing in his soil, and the residue from previous manures and crops. The application of a small quantity of ammonia and mineral matter will often yield as great an increase of vegetable produce, as if twenty or thirty times the weight of farm-yard dung had been employed. This is not to be wondered at, when it is considered that by far the greater bulk of the dung consists of water and other constituents which the plant can obtain either from the air or the soil. We thus get, by the use of concentrated manures, a much greater weight of increased produce than there was of manure employed. The case is very different in the supply of food to our stock. The quantity of the constituents returned in the solid and liquid excrements, and in the increase of the animal, must invariably be very much less than was contained in the food consumed. No concentration of constituents, nor any amount of supply of some only, of those required for the *respiration*, the *perspiration*, the *excrements*, and the *increase*, can enable the animal to obtain a particle of what is requisite for these from any other source than his food.

In the case of stock-foods, therefore, the scope for economical manufacture or concentration is very limited. Among the natural complex foods, hay may be said to be more concentrated than straw, and corn more concentrated than hay. Of the individual non-nitrogenous, or so-called respiratory and fat-forming constituents of food, fatty matter is very much more concentrated than starch or sugar. But our ruminant animals cannot thrive upon exclusively concentrated food, even though it be so in the limited degree in which it exists in corn. They require a certain amount of the bulky but innutritious woody fibre, which they find already combined with other constituents in hay or straw. Those animals, such as pigs, which do not require the same proportion of woody fibre for their digestive operations, are provided with a suitable combination of starch, sugar, oil, nitrogenous substance, and mineral matters—already formed in corn and other natural foods—far more economically than they could be supplied with them by the intervention of manufacturing processes.

There is, in fact, only one manufactured staple article of food employed by the farmer with advantage on the large scale. This is oilcake. Even oilcake is not manufactured exclusively for the purpose of feeding! it is the residue of a process for obtaining oil, the value of which, to a great extent, meets the cost of the production of the cake. The cake was produced before there was any demand for it as

food for stock. It would continue to be produced if the farmer did not so employ it. Its price as food is not regulated so much by the cost of production, as by what the farmer will give for it in competition with other articles. It may be mentioned, however, that many of the recently introduced manufactured foods cost four or five times as much, weight for weight, as our most nutritive oilcakes.

From all that has been said, it will be clear that these newly manufactured foods cannot substitute any of the necessary constituents contained in our ordinary stock foods any further than they themselves supply them. So far as the mere supply of alimentary constituents is concerned, a mixture of linseed or oilcake, and corn-meal, can provide these at one fourth to one fifth the cost of the specially-made artificial foods. Such foods cannot, therefore, be relied upon as staple articles. The virtues which they really do possess over and above those which could be secured at one fourth to one fifth the price are confined, therefore, to the action on the health and digestion of the animals of the small amount of stimulating and carminative seeds which they contain. In fact, so far, they are sauce or medicine, rather than food. As such they are likely rather to increase than diminish the appetite for further nutriment. Still it is quite possible that, if judiciously compounded, they may be of service in keeping horses in a more healthy state of body, or in aiding the digestive powers of weakly animals which do not readily consume and thrive upon the ordinary foods. It should, however, be clearly understood by the farmer, that these manufactured foods cannot do away with the necessity for a given amount of digestible and assimilable constituents in the collaterally consumed ordinary food. There is, as yet, no exact evidence to show that they can, even in their office of condiments or medicines, enable the animals profitably to appropriate a larger proportion than they otherwise would of the constituents of the other food they consume. That is to say, there is no proof afforded, that with their use there is either a larger amount of increase obtained for a given amount of food-constituents consumed, or that a smaller amount of the food-constituents passes off unused and effete in the fæces.

Below are given the results of the practical trial of the food, the proximate analysis of which has been already recorded. The plan of the experiment was as follows: six pigs were selected and divided into two lots of three each, the collective weights of the respective lots differing from one another by only 2 lbs. To lot No. 1 a mixture was

given, composed of nine parts barley-meal and one part bran. To lot No. 2 the same mixture of barley-meal and bran was given, with the addition of two parts of the manufactured food to every ten parts of the barley and bran mixture. The food was in each stirred up with hot water, and both lots were allowed as much of their respective foods as they chose to eat. The results of this comparative experiment were as follows :

	DESCRIPTION OF FOOD.	
	<i>Lot 1. Nine parts Barley-meal, one part Bran.</i>	<i>Lot 2. Nine parts Barley-meal, one part Bran, two parts Manufactured Food.</i>
No. of Pigs	3	3
Duration of experiment	28 days	28 days
Original weight . . .	357 lbs.	355 lbs.
Final weight	496 „	494 „
Increase	139 „	139 „
Total food consumed	547 „	556 „
Food consumed to produce 100 of increase	393	400

The amount of increase for a given quantity of food consumed was in both cases good. It is obvious, however, that so far from there being less total food consumed when the manufactured meal was employed, there were 9lbs. more of the mixture eaten when one sixth of it consisted of the expensive manufactured food ; whilst the amount of increase in weight was exactly the same in the two cases. In fact, the results are so nearly absolutely identical that the difference cannot perhaps be fairly attributed to any intrinsic difference in the character of the food. But it is, at any rate, clear that nothing was gained by adding to the barley-meal and bran one fifth of its weight of food, costing about five times as much money.

The general observations that have been made above are, then, fully borne out by the results of this experiment. In conclusion, I feel bound to say, that I should require much clearer evidence than any that has hitherto been adduced, to satisfy me that the balance-sheet of my farm would present a more satisfactory result at the end of the year, were I to give to each horse, ox, sheep, and pig, a daily allowance of one of these costly foods.—*Journal of the Royal Agricultural Society.*

REPORT ON THE CATTLE PLAGUE, STEPPE MURRAIN,
OR RINDERPEST.

By JAMES BEART SIMONDS, Professor of Cattle Pathology
in the Royal Veterinary College, London.

(Continued from No. XXXI, p. 693.)

The chief ravages of the disease, as we have met with them, are in the large intestines. The blind end of the colon—the cæcum—was, in one case in particular, ulcerated over several inches of its inner surface, *that is*, numerous small and distinct ulcers existed, which had evidently had their origin in the follicles of the mucous coat. Thin deposits of lymph, varying in size from that of a pea to the end of the finger—scabs, as they have been designated—usually stud the large intestines almost throughout their whole extent. They are of a dirty yellow colour, and adhere with tolerable firmness to the mucous membrane. In some places ulceration is found to be going on in the membrane; in others this destructive process has ceased, and the healing one commenced, and in most no change of structure can be observed. The terminal portion of the rectum is generally implicated to a far less extent.

The substance of the liver is healthy; the gall-ducts, however, contain layers of effused lymph; and sometimes to an amount sufficient to block up the passages. The gall-bladder is filled with bile possessing its ordinary characters, but the inner surface of the bladder is not unfrequently in precisely the same state as the mucous membrane of the large intestines.

The kidneys are healthy, and the urinary and generative systems apparently unaffected.

The larynx is occasionally slightly ulcerated, particularly on the edge of the arytaenoid cartilages. No ulceration, however, has been seen by us throughout the whole extent of the windpipe and bronchial tubes; but thin layers of effused lymph lying in close contact with the mucous membrane are almost invariably present. The lungs are healthy, of a normal colour, and often remarkably free from congestion. Their serous membrane is also unaffected.

The heart is healthy, occasionally rather flaccid, and without blood in its cavities. The blood in all the vessels is *fluid*, evidently from loss of its fibrine. It is also darker in colour than ordinary venous blood. The brain and spinal marrow give no evidence of structural change; but an increased quantity of fluid is often found in the ventricles of

the brain, and especially in the upper part of the *theca vertebralis*. The flesh is firm, of a good colour, and has but little tendency to pass quickly into decomposition; indeed, we have not unfrequently seen it in a state fitted for food.

Pathology.—It is difficult to speak with certainty of the true nature of the rinderpest, but it is evident that the morbid matter on which it depends, having entered the system through the medium of the organs of respiration, soon acts upon the blood, by converting some of the constituents of that fluid into its own elements; and that, while this process is going on, the animal gives no recognisable indications of being the subject of the malady. This period constitutes the incubative stage of the disease.

The blood, having thus become contaminated, its vitality impaired, and the poison augmented a thousand fold within the organism, the brain and nervous systems, as the centres of sensation and motion, have their normal function necessarily and quickly interfered with, and hence one of the earliest indications of the disease is a spasmodic twitching of the voluntary and other muscles of the body.

The malady has now arrived at a stage when nature makes a bold effort to rid the system of the poison, and in doing this the force of the morbid matter, so to speak, falls with more or less severity on the mucous membranes throughout the entire body. Effusions of lymph—the fibrine of the blood—take place into the follicles of the mucous membranes, as an effect, perhaps, in part of the overtaking of these grand excretory organs, and partly because the fibrine itself is charged with the *materies morbi*, and has probably also lost some portion of its vitality, which renders it unfitted to remain in the vessels. Dark-coloured blood, and which remains fluid even after death, from its defibrination, now flows in the vessels; and dysenteric purging also sets in, under which, as a rule, the animal quickly sinks.

If, on the contrary, the *vis vitæ* should be sufficiently powerful to withstand so great an exhausting process, then the poison being cast off, and principally by the digestive canal, the patient slowly rallies, and the functions of the entire organism are gradually restored. Healthy fibrine again supplies the place of that which was lost, so that the blood will now clot when removed from the vessels, and be once more brought into a state to support the vitality of the prostrated organs.

Ulceration of the mucous membranes, commencing in the follicles, may attend these processes, but it is not a necessary pathological condition of the pest. It is rather to be regarded as a sequence depending for its existence on the amount of

contamination of the blood, the duration of the disease, and the diminished strength of the vital forces.

In all this we have a great similarity to the pathology of the small-pox, but in that disease the external skin is the principal focus of the malady, while in rinderpest the mucous membranes, or internal skin, are its chief seat. Small-pox frequently proves fatal before the local symptoms are well established; and so, indeed, does rinderpest, from the great amount of morbid matter with which the system is charged.

Names given to the Disease.—Of all the terms which have been given to this malady, there is none which we are willing to adopt in preference to “RINDERPEST.” It is the one which we have employed throughout this report, although it may be thought that it is too general in its application, and deficient also in explicitness, to be selected in preference to others which set forth something of the nature of the disease. The term, nevertheless, explains that the affection is a true *cattle plague*; and, besides this, being the one which is used throughout Germany, it is thoroughly understood in nearly every European state—a fact which gives it a value above many others.

“STEPPE MURRAIN,” although this name tends to throw some light on the chief location of the disease, it nevertheless fails to take cognizance even of the kind of animal which is the subject of the malady, and leaves the pathology of it entirely unexplained.

“CONTAGIOUS TYPHUS” is far from being appropriate, notwithstanding that the disease has some characters which are common to the typhus of man. The differences which are observed in the duration, progress, symptoms, and results of the two maladies, are far too numerous and important to warrant the pathologist in the adoption of a *definite* term of this kind, and for this reason we have purposely abstained from employing it.

“LÖSER DÜRRE” is, in our opinion, the most inappropriate of any of the names to which we have alluded. The hardness of the third stomach, or rather of its contents, which the term implies, is not a speciality attaching to the affection. It may often be present in the pest, but it is just as frequently absent. The term directs attention to one particular part of the body as the seat of diseased action, and consequently it often leads to incorrect conclusions. We have seen men of ability, who have been called upon to make *post-mortem* examinations, hesitate to pronounce a decided opinion of the existence of the malady when the third stomach has been found healthy. Hardness or dryness of these contents is common in many

other diseases of cattle, and in nearly every instance in which it occurs it is but an effect of suspended function of the third stomach, as the cessation of rumination is of the first.

Treatment.—We have very little to report of a satisfactory description of the medical treatment of the rinderpest. Indeed, no attempts at curing the disease are now made, in consequence of the inutility of all the means which have hitherto been tried, and the greater risk which is incurred of a further extension of the malady by the keeping alive of animals which would otherwise be slaughtered at once. The advancement which has of late years attached to the science of medicine would seem to hold out a hope that remedies may yet be found for this incurable disease. All experiments, however, which may be undertaken for this object would have, we believe, but little chance of success unless they were carried out by, or under the immediate superintendence of the professors of the different veterinary institutions of those countries in which the pest prevails.

No definite plan of treatment can be laid down, except it is that of supporting the fleeting vital powers while nature is attempting to rid the system of the poison, and then endeavouring to counteract the ill effects which had resulted from these efforts. Remedies calculated to promote this end must, however, be selected for each particular case, and also be suited to each particular stage of the malady, or no good is likely to follow.

With these few observations on this part of our subject, we shall proceed to give the details in full of several cases of the disease which came under our immediate notice.

CASE 1.

Mention has been made, at page 648, *Veterinarian*, 1858, of an aged cow, which was observed, on our second visit to the quarantine-stations on May 5th, to be out of health, the symptoms indicating that she was the subject of the malady.

Considering the great fatality and the usually rapid progress of the rinderpest, it is somewhat surprising that its victims should so frequently show such little disturbance to their health at the commencement of the attack. The animal in question was a remarkable instance of this, as well as of the occasional mild character of the disease. The chief indications of illness which she exhibited, when first seen, were tremors of most of the voluntary muscles of the body, but more especially those of the extremities. The *triceps* muscles of the fore-limbs; and the *glutei*, *vasti*, and *triceps* in particular of the hind-limbs, were most affected with these tremblings; besides which a spasmodic jerking of their fasciculi could be detected as coming on at irregular and short intervals. The animal stood with her back arched and legs gathered together under the body. The head was extended, ears lopped, and

coat staring. She was remarkably dull, and greatly indisposed to move. Her appetite was impaired, but not lost, as at times she would pick a little fresh grass. Rumination was tardily performed; the action of the bowels unaffected; the breathing natural, and the pulse almost undisturbed. Indeed, had the morning been a cold one—which it was not—nearly the whole of the symptoms that she exhibited might have been ascribed to an exposure to the bleak mountain air.

Towards the after part of the day, the spasmodic contractions of the muscles were more diffuse. The jerking of those situated at the infero-lateral part of the neck was very peculiar, imparting a movement not very dissimilar to the so-called venous pulse. The skin was rather warmer than natural, but the coat was staring, as in the morning. The breathing still continued undisturbed, while a slight but “thick cough” was occasionally heard. The pulse had risen to about 62. It was regular in its action, but beat with somewhat diminished force. There was no injection of the visible mucous membranes present, nor dryness of the muzzle, as seen in active febrile diseases. The Commissioners expressed their decided opinion that this was a true case of the pest, although an unusually mild one, and they therefore gave orders that the cow should be taken from the others, and placed in a separate shed, temporarily erected with the branches of pine trees for the purpose, so that we might watch the further progress of the disease.

May 6th, 7 a.m.—The symptoms upon the whole have undergone but a slight change since last evening. The animal takes but little food, and is equally as dull and dispirited. She shows a disposition to drink freely of water, and would take even more than it is desirable to give her.

8 p.m.—No alteration of importance.

7th, 6 a.m.—A change for the worse has come on during the night. The prostration of strength is now considerable, and the animal is down, unable to rise. Neither the pulse nor the breathing has, however, undergone much change, the principal alteration being that the action of the heart is rather weaker. She refuses food. Rumination is suspended, and the bowels are rather irritable,—voiding large quantities of fæces. The twitching of the muscles are yet present, but mostly confined to the shoulders and neck. The cough is more frequent, and a little mucous discharge likewise comes from the nostrils. The conjunctiva is uninjected, but the eyes are somewhat intolerant of light. The general surface of the body is chilly, as are also the legs, ears, and horns.

On visiting the animal in the evening, we found that a slight diarrhœa had set in during the day; that the pulse had risen to 70, and that the prostration of the vital forces was increased. There were, however, but few indications that the attack would terminate fatally, the other symptoms remaining about the same.

8th.—The twitchings of the muscles are scarcely to be observed this morning, as is generally the case in the advanced stages of the malady. The diarrhœa is, however, more copious, but yet not alarm-

ing; the pulse is quicker and weaker, and only to be felt at the heart. The breathing has now become somewhat increased, but is neither laboured nor difficult. The body is cold, and the animal lies with a drooping head and closed eyes, as in a state of drowsiness, refusing all food, but showing the same disposition to take water.

The Commissioners explained that they considered there was no chance of the animal's ultimate recovery, although the case would doubtless be a very protracted one. They also said that they had decided to have her killed in the after-part of the day, if we had seen enough of the disease in its mitigated form, that we might institute a *post-mortem* examination. This arrangement met with our concurrence, and especially as other cases had occurred since this cow was attacked, which we were busily engaged in watching the progress of, as by it an opportunity would be afforded of seeing the lesions which were early produced by the malady.

SECTIO CADAVERIS.—Respiratory Organs.—Mucous membrane of the nasal cavities slightly congested, and covered in patches by a small quantity of a yellowish and somewhat viscid discharge. Larynx healthy; trachea nearly free from injection, but containing some thin shreds of colourless lymph lying in close contact with its lining membrane. Bronchi healthy; lungs perfectly healthy. No effusion into the thorax.

Circulating Organs.—Heart and its vessels healthy. Blood, dark in colour and but partially coagulated, the coagulum being very soft.

Digestive Organs.—Tongue healthy; fauces and velum congested; pharynx and œsophagus healthy. Rumen healthy, containing a fair amount of ingesta. Reticulum and omasum likewise free from structural disease, and no hardness of the contents of the omasum (*löser dörre*). Slight efflorescence of the mucous membrane of the abomasum in patches was present, and nearly throughout the membrane was dotted over with yellowish points, produced by effusions of lymph into its follicles. The contents of the stomach were fluid, in which floated some shreds of lymph. The duodenum, jejunum, and ileum were nearly free from disease, presenting, however, here and there, a similar state of the mucous membrane to that of the abomasum. The cæcum, colon, and rectum were filled with fluid fæces, but their mucous membrane was, on the whole, free from structural change.

Liver healthy in substance; the gall-ducts were, however, enlarged and thickened in their coats from chronic disease associated with depositions of osseous matter. The gall-bladder was filled with bile, and its mucous membrane was likewise affected with effusions of lymph into its follicles analogous to the abomasum and intestines.

Pancreas and Spleen.—Healthy.

Urinary System.—Kidneys, bladder, &c., free from disease.

Nervous System.—The brain, spinal marrow, and their membranes, were healthy, in so far as the structural appearance indicated.

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Repertorium der Thierheilkunde.

Edited by Professor HERING, Stuttgart, 1858.

CALCULI IN THE BLADDER OF FEMALE DOMESTICATED ANIMALS.

By M. STRAUB, Regimental Veterinary Surgeon.

ACCORDING to the author, mares are more subject to this affection than cows or bitches. In other species of domestic females he has not met with it. In the mare there is generally but one calculus. In the bitch there are usually more than one.

Calculi in the bladder of female domesticated animals, as stated by the author, differ in number, size, and structure, according to the state of the health of the animals affected. Small, smooth ones, when they do not cause obstruction, are of very little consequence, and may pass off unnoticed. When, however, they have acquired a large size, they partly obstruct the orifice of the urethra, and cause considerable irritation and frequent contraction of the bladder. Hence one of the symptoms is a frequent attempt to urinate. This is characteristic of the affection, if by the roughness of the stone the bladder is much irritated. The urine often becomes slimy, which, in mares, has led to the supposition that they are constantly horsing. This mistake is easily made when the urine is voided in small quantities, and also when redness of the mucous membrane of the vulva is present, which it often is in these cases, as also a switching of the tail, and other ordinary signs. When the surface of the stone is very rough, the urine becomes bloody, and finally clots of blood are always found in it. This occurs principally after a hard ride, or drawing a heavy load. The animals are then found to be very tender over the region of the kidneys; they lose their appetite, and the pulse and respiration become increased. Ultimately this may lead to inflammation of the kidneys.

The suppression of urine occasioned by a stone in the urethra is not so frequent as in the male subject. Long-continued sojourn of calculi in the bladder causes hypertrophy

of that organ; suppuration of the mucous membrane; enlargement of the ureters or pelvic cavities of the kidneys; paralysis of the bladder, and death, consequent on inflammation and gangrene, or a rupture of the same.

The remedies recommended by the author are diuretics, and lithontriptics, given internally, or by injection into the bladder; and the extraction of the calculi by enlarging the urethra. The first are only of use when the calculi are yet imperfectly formed, or in a sedimentous state. The second must be assisted by an alteration in the diet, and the last, or the operation, which is much easier than in the male subject, is to be resorted to as a *dernier ressort*.

INJURIOUS EFFECTS OF VERATRUM ALBUM WHEN USED AS A COUNTER-IRRITANT IN CASES OF PLEURO-PNEUMONIA IN CATTLE.

By M. BENLZEN, Government Veterinary Surgeon, Schwargern.

On the 1st of June, 1858, the author was sent for by Baron von Gemmingen, of Bondfeld, to save, if possible, some of his stock, thirty-eight having been poisoned. It is probable that the Baron had for some time past observed pleuro-pneumonia amongst his stock, but he had not given notice to the authorities, to avoid, perhaps, the unpleasantness of having his estate isolated, as directed by the sanitary police. Instead thereof he had subjected the affected cattle to the treatment of a veterinary surgeon residing in the duchy of Baden, who had inserted portions of the root of the white hellebore on each side of the chest, as a prophylactic. All the cattle had been thus treated on the same day, the plant having been dug up fresh out of the garden for the purpose; a piece of this, the length of a man's finger, had been inserted on each side of the chest, behind the fore legs, and left there. The effect of this, the plant being taken from a rich soil and full of sap, was fearful. The chest, abdomen, neck, and head, became swelled to an enormous size; the animals could neither eat, drink, nor ruminate; the respiration was hurried, and they rested their heads against the mangers or walls. There was more or less trembling, sometimes of the whole body; weeping of the eyes, the pupils being dilated; grinding of the teeth; foaming at the mouth, with attempts at vomiting; giddiness and falling, and when down, lying with their legs extended and stiff in all the cases. At last they were unable

to rise, and died in convulsions. Some of them bellowed fearfully, particularly when approached by any one. The pulse, in those which were the most affected, could scarcely be felt even at the heart, but in all the cases it was never less than from 90 to 140 beats in the minute. Two died quickly, and six more soon followed.

The autopsy of the eight animals showed the effect of the poison in the meteorization of the abdomen; the protrusion of the rectum, which was mortified; the serous effusion into the cellular tissue, and the gangrene in more than one part of the body, principally about the chest, in the immediate neighbourhood where the root was inserted. On opening the body, the peritoneum showed violent inflammation and gangrene to have existed. The abdominal viscera were in a similar state. In the thorax, the pleuræ, the lungs, the heart, and partly the diaphragm, were inflamed and gangrenous. The blood was dark coloured and viscid. Only in one case was there hepatization of the lungs, with slight adhesion of the pleuræ. All the others were free from pneumonia.

The *treatment* consisted in the removal of the obnoxious root, and bathing the parts freely with cold water. But as the insertion of the root had been from above downwards, the channels were all filled with serum, which, by absorption, had much aggravated the evil, and it became, therefore, necessary to make counter-openings, so as to allow a free escape of the serum. Afterwards, these were injected with fresh oil of poppies; the swelling was also extensively scarified, and dressed with the same oil. Subsequently, the compounds of chlorine and digestives were resorted to. Internally, nitre was administered in a decoction of linseed and oak bark. By these means the remaining thirty were saved; but large portions of the skin were detached about the chest and abdomen, which had subsequently to be removed. This gave them the appearance of being skinned alive, and caused great suffering. The milk from the affected cows being given to pigs, caused violent vomiting in them in less than a quarter of an hour. The flesh of those which had died being eaten by some dogs, caused the same effect on them, and some cats which had also eaten freely of it died.

OPERATION FOR A DOUBLE SCROTAL HERNIA IN A FOAL.

By HERRN GIERER, Veterinary Surgeon, Thürheim.

An eight-months-old foal was caught in a halter by its hind foot, and after being released its scrotum was found to be of an extraordinary size. The swelling was soft and yielding to the touch. The patient very soon refused his food, was dull and uneasy, and frequently shifted its position.

On examination, Herrn Gierer found the case to be one of double scrotal hernia, and immediately decided on performing an operation. To this, however, the owner objected, and it was consequently delayed for a week. By this time, the animal had become very weak, when the owner, finding that it was the only chance of the animal's life being preserved, consented to its being performed.

The foal was laid on its back, and held in that position, with its hind parts elevated. The hernias were easily reduced. The operation was by section of the scrotum on each side, which was then separated from the tunica vaginalis, and a ligature applied close to the ring, the ends of which were allowed to hang out of the openings in the scrotum. The testicles were not removed. The patient was put into a stall considerably raised behind, and was prevented from lying down for a fortnight. In about four weeks the cure was completed.

Journal des Vétérinaires du Midi.

CLINIQUE OF THE IMPERIAL VETERINARY SCHOOL OF
TOULOUSE.

By M. SERRES, Chef du Service.

ON CALCULI IN THE URINARY ORGANS OF RUMINANTS.

It is an established fact that calculi exist in great numbers in the bladder and also in the pelves of the kidneys of ruminating animals. By the smallness of their size they frequently pass off with the urine, and this without causing any great inconvenience to the animal. Many oxen are evidently affected during life, as they are found in the bladder from the size of a pin's head to that of a pea. The latter named are generally very numerous. It is necessary to bear in mind that the

penis of the ox is narrower towards its extremity, which often leads to the stoppage of the calculi in their progress; and further it is important to remember when urethrotomy is to be resorted to, that the corpus cavernosum likewise prevents the dilatation of the urethral canal, and that the sigmoid flexure of the penis near the perinæum is surrounded by a large quantity of loose cellular tissue.

The time of the year when animals are most subject to this affection is that in which they are fed on green food—more particularly on maize.

The usual symptoms are slight colicky pains at intervals, which are, doubtless, produced by some of the small calculi causing temporary obstruction to the flow of the urine. That these are often expelled after some effort is proved by the circumstance that they are frequently found near to the end of the penis.

The practical inference to be deduced from these facts is, the forming a correct diagnosis of the *nature* of the colic. But this is not easy. The examination of the urine from time to time will, however, be of great assistance, and if small calculi be found in it, the true nature of the affection becomes at once apparent.

M. Serres has very little faith in chemical solvents; but recommends diuretics in order to expel the concretions. Supposing they are of small size, this plan is to be preferred, but if not, an acceleration of the crisis is produced by it, and the operation of cutting into the urethra must be resorted to. Should the animal, however, be in full flesh, it is, perhaps, better that he should be sold to the butcher.

When the operation is decided on, and the position of the calculus has been ascertained, if it be in the pelvis, an incision should be made in the ischial bend, and when carried into the urethra, a probe should be introduced so as to find the exact location of the stone. The question now is, whether it is better, after the example of Laroche-Lubin, to extract it or to push it into the bladder. It is more surgical to extract it, and this is easy when the stone is near the incision, but more difficult when it is further removed from it. Then it is necessary to use forceps of a peculiar shape, which are not always at hand. It is often not easy to seize the stone; and long-continued manipulations are not without inconvenience, as the mucous membrane is not unfrequently injured by it, and inflammation of the bladder is the consequence.

To return the calculus into the bladder is easy and very simple, and can be effected with promptitude, the mucous

membrane not being injured thereby, but it must be done skilfully. A leaden probe is the best instrument for this purpose, which should be blunt pointed. In default of this, a whalebone one may be used advantageously. This mode of proceeding might be deemed irrational, but it must be borne in mind that calculi are often numerous, and that by returning one into the bladder little harm can be done. Directly the stone is removed, the urine begins to flow freely, unless the coats of the bladder have lost their power of contraction by over-distension, in which case the hand must be introduced into the rectum, when by means of a moderate degree of pressure, the contents will be expelled; after which, the coats gradually recover their tone, but this sometimes does not take place under two or three days.

The non voiding of the urine after the operation sometimes depends upon spasm of the neck of the bladder. This is easily ascertained by the operator not being able to empty the bladder by the above-named pressure.

Other calculi might also be retained in the course of the urethra. It is very important to ascertain this; which may be done by injecting it with water, by means of a small syringe. If this be the case, it is important to remove them in order to allow of the urine passing off by its natural channel. This may be done by endeavouring to push the calculi either towards the ischial region or the end of the penis. In the impossibility of effecting this, the operation of cutting down upon the largest stone must be resorted to. In doubtful cases of the location of the calculus the question is—Should the incision be made where the obstruction is in nineteen cases out of twenty, namely, in the ischial region? Bernard was, for reasons he has stated, in the *Journal du Midi*, 1840, in favour of the ischial region. If urethrotomy is performed in the scrotal region, the incision in the skin should be made large, and the surrounding cellular tissue freely dissected to guard against the infiltration of urine consequent on the operation. The incision is also to be made longitudinally with the urethra, with a view of preventing too speedy an adhesion, and it should likewise be sufficiently long.

THE VETERINARIAN, FEBRUARY 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

“USING A GLANDERED HORSE IN A PUBLIC VEHICLE.”

IN giving insertion to a communication from Mr. T. A. Dollar on the subject of “*using a glandered horse in a public vehicle*,” we are desirous of expressing our sentiments of the whole transaction.

First, with regard to the case itself; we do not hesitate to record our firm conviction that the opinion given by our colleague, Mr. Varnell, of the horse being glandered when examined by him in September last, was perfectly correct.

Secondly. We consider that the symptoms now shown by the animal are sufficient indications that the malady still lurks in his system in a latent form.

As to the healing of the ulcers in the nostrils, and the diminution of the enlargement of the submaxillary glands being adduced as the “*best test of the animal being glandered or not*,” we would remark that, in common with many veterinary surgeons of experience, we have seen several instances where the same thing has taken place, and it is not a satisfactory proof of the malady not being really glanders. These are the very cases to deceive the young practitioner and the man of boasted specifics: besides which, they are also the most likely ones to spread the disease among other horses.

Well do we remember, for it is painfully impressed on our minds by the ruin with which it was associated, and by the opposition we had to encounter, an instance of a horse of the kind being left for three years in a coaching establishment, and which during this time experienced no less than three relapses of the disease, discharging on these occasions from his nostrils the characteristic matter of

glanders, and having an extensive ulceration of the Schneiderian membrane, with all the other symptoms of the malady. On each of these occurrences his owner had him isolated from the rest of the stock, exhibited some tonic medicines, fed him liberally, and adopted other ordinary means for his restoration, and with apparent benefit. On the passing away of the leading symptoms, particularly on a subsidence of the discharge, and a healing of the ulcers, he was again brought into work; but what was the consequence? why, continued outbreaks of glanders and farcy in their most virulent form, and the destruction of many other horses of far greater value and usefulness, and which otherwise might have remained healthy and able to do their work for years. Often have we seen six and eight of these victims sent away at a time to the knackers to be destroyed; the evening being selected, so as to avoid public observation.

We would counsel Mr. T. A. Dollar not to endeavour to build his fame on such a false basis as this, nor to expose himself to the accusation of endeavouring to raise himself at the expense of the Royal Veterinary College. Many before him have ineffectually tried the same thing. According to his own confession, Mr. Dollar had recourse to a trick to obtain a second opinion from Mr. Varnell. Why was this? And why was the horse not also shown to the Veterinary Surgeon of the Police force, whose evidence agreed with the original certificate of Mr. Varnell? The professional reputation of a public man we had hoped was too highly prized for any member of the body to attempt to filch it away, seeing that he, also, must suffer by the success of his scheme. We unhesitatingly aver that such conduct is unworthy of a professional man, and has a parallel only in the practice of "horse copers," who to obtain their dishonest ends will stain white legs to make them black, cut tails to make them shorter, and, indeed, leave nothing undone by which they can deceive. We may blush for our profession, if, among us, men are found who will descend to similar practices, but at the same time we can well

afford to leave them exposed to all the odium and disgrace which attach thereto.

It is a well-known fact that glanders is not an unfrequent visitor at cab-establishments, and from a statement in Mr. Dollar's communication to the effect that "*the owner, from the great trouble and annoyance she had been subjected to on previous occasions, was afraid to send the horse to work,*" it would appear that the one to which this animal belongs is no exception. If this be true, what opinion must the public entertain of veterinary surgeons who will give countenance to the act of sending on the cab-stands of this metropolis horses affected with a loathsome, contagious, and fatal disease—fatal alike to man and beast? The risk of the extension of the malady, always great, is thereby increased in a tenfold degree, and all this is incurred with the full knowledge of parties whose duty to the public and respect for their own reputation should teach them to be the first to interfere to put a stop to such dangerous and illegal proceedings.

One other circumstance in connection with this case calls for comment. It is a singular, but at the same time a significant fact, that, with one exception, all the veterinary surgeons who were requested by Mr. Dollar to examine the horse, after the supposed cure, and to do this *especially* as to his having been affected with glanders, neglect to mention in their certificates the circumstance of the Schneiderian membrane giving proof of its being at one time extensively ulcerated. Mr. Mavor, a gentleman of experience, is the exception; and it is evident from the wording of his certificate, that he is desirous of pointing out the circumstance so as to guard himself against any future contingencies.

On the very day we pen these remarks we observe, in the public prints, that Mr. Dollar has made another application to the magistrate at the Marlborough Street Office. We should not have considered this matter important enough to merit our notice, but for the statement which we have put into italics in the following extract taken from the *Daily Telegraph*. It will be sufficient that our readers compare this with the certificate given by Mr. Varnell, to be fully satisfied

of the animus which pervades the whole of the transaction :

“MARLBOROUGH STREET.

“Important to Owners of Horses.

“Mr. DOLLAR, veterinary surgeon, of Bulstrode Mews, entered the court and addressed the sitting magistrate under the following circumstances :

“Mr. DOLLAR said his Worship might remember, that on the 25th of September last, a summons was determined by him against Mrs. Liverson, of the Horseferry Road, for suffering to be used a certain horse alleged to be glandered, and that he attended professionally for the defendant, and gave evidence that in his opinion the horse was not glandered, against the opinion entertained by Mr. Cherry, the police veterinary surgeon, who gave evidence on the other side. His Worship might also remember that, as they were professionally at variance on the point, he despatched an officer named Browning with the horse to the Royal Veterinary College, Camden Town ; and that he brought back with him a certificate from one of the professors (Varnell) to the effect that the horse was glandered ; upon which he inflicted a fine of 40s. on the defendant. Since then he had treated the horse as for a cold, and, it having been cured, it was again sent to the Veterinary College in a baker's cart, and a certificate given which, although mentioning several faults, said not a word about its having been glandered, *and stated it to be sound.*

“Mr. BINGHAM said there was no case before him, and therefore he could not reopen the subject ; and that if he (Mr. Dollar) felt his reputation had suffered, he must make his application elsewhere.

“Mr. DOLLAR said he only wished to vindicate the professional opinion he gave at the trial, and which he had certificates from other surgeons to prove was correct.

“The applicant then left the court.”

We may here safely leave the matter ; but as our legal administrators have likewise at this very time been engaged in a suit arising out of the sale of some glandered horses, we append a report of the trial as published in the *Times*.

“COURT OF COMMON PLEAS, WESTMINSTER, JAN. 22.

“(Sittings at Nisi Prius, at Westminster, before Mr. Justice BYLES and a Common Jury.)

“RUSSEN v. WILLIAMSON.

“Mr. Serjeant Tozer and Mr. F. Russell appeared for the plaintiff ;

Mr. Serjeant Ballantine and Mr. Hale were counsel for the defendant.

“This was an action brought to recover damages for a breach of warranty of three horses sold by the defendant to the plaintiff, who also complained that the animals had the glanders, which disease they communicated to several other horses belonging to him, all of which died. The plaintiff was a carrier residing at Croydon, and the defendant is the contractor for the omnibus traffic of the South-Western Railway, having a large establishment near the Waterloo station. In the month of June last the defendant sold to the plaintiff three horses for the price of 30*l*. They were placed in the stables of the plaintiff. One of them died, on the day after it was delivered, of either farcy or glanders. Ten days afterwards another horse died, and, at different intervals of time, several others of the same disease. The defendant’s case was that there had been no warranty, and that it was highly improbable that the defendant should warrant horses for which respectively 12*l*., 15*l*., and 3*l*. only had been given; that they were free from disease when they left the defendant’s stable, and that the glanders originated in a gray Belgian horse which had died in the plaintiff’s own stables. It was also said that the plaintiff had not thought of bringing the present action until he was sued for the price of an omnibus sold to him by the defendant.

“The trial, having lasted the whole day, was not concluded when the Court rose.”

“The trial (part heard yesterday) was concluded this morning (Jan. 23.) It seemed clear that the defendant both before and after the sale of the three horses had sent horses to the knacker’s to be killed, but on the question whether or not they had the glanders, and, indeed, on every important point in the case, the evidence was extremely contradictory. The witnesses on either side were examined and cross-examined at great length; but the main questions for the consideration of the jury, as laid down by the learned Judge in a most careful and elaborate summing up, were—Did the defendant warrant the horses at all? Were they afflicted with the farcy or glanders? Had the defendant the farcy or glanders in his stable before he sold these horses? if so, did he know it? Did the farcy or glanders of which the plaintiff’s horses died originate with the defendant’s horses, or with the gray Belgian horse?

“The jury found a verdict for the plaintiff—Damages, 124*l*. 2*s*., and stated that they allowed 20*l*. for the two horses sold by the defendant to the plaintiff which had died, and 96*l*. for the horses belonging to the plaintiff which also had died. The remainder of the sum, deducting for the value of the carcasses, was made up by the allowance of veterinary expenses and the loss on the omnibus, which had broken down and been resold.—Verdict for the plaintiff—Damages, 124*l*. 2*s*.”

Veterinary Jurisprudence.

HORSE CAUSE.

Communicated by JOHN KENT, M.R.C.V.S., Bristol.

BRISTOL COUNTY COURT.

(*Before Sir JOHN EARDLEY E. WILMOT, Bart., and a Special Jury.*)

STABBINS *v.* KNEE.

A day was appointed, and set apart for this trial on Nov. 22d, 1858.

In June, 1857, a heavy goods van, belonging to Mr. Knee, with an estimated weight of five tons lading, came in contact with a one-horse potato-cart belonging to Mr. Stabbins, and knocked one wheel into a small ditch, and the horse off its legs. In the scramble, the horse received a scratch inside the near knee. The plaintiff claimed more than £20 for damages.

The trial was a very long one, so that I shall only give a short sketch of what is usually styled the scientific or medical evidence.

After the accident, the horse brought the load of potatoes twelve miles into Bristol, and took the empty cart about twenty miles home on the same day. The collision occurred about two o'clock in the morning.

Mr. Stone, for plaintiff, having opened the case, called *Mr. Cade*.

Are you a veterinary surgeon?—Yes.

Practising in Bristol?—Yes, as assistant to *Mr. Withers*.

You attend patients for him?—Yes.

Do you remember being sent for to Worle, by *Mr. Stabbins*, the plaintiff in this action, to see a horse that had been injured by a collision with the defendant's van?—Yes.

Just tell the court and jury, in what state you found it; and now *Mr. Cade*, in giving your evidence, do not be afraid of *Mr. Kent*.—I found a very serious lacerated wound inside the off knee (it was the near knee).

It was a very serious injury, was it not?—It was a very serious injury.

What did you do to it? Of course you put it under proper medical treatment.—I did; I dressed it, and applied cold pads, and told *Mr. Stabbins* to keep the horse quiet, and should it become more serious, or not go on well, to telegraph to me, and I would come immediately.

When did you see it again?—In three weeks from that time. *Mr. Stabbins* then requested me to see it again.

And you did so?—I went, and saw it again.

How did you find it?—The wound was healed, and I directed that the horse should not work, but that he should have walking exercise for a month, and then have gentle work.

Cross-examined by *Mr. Edlin*.

Pray, *Mr. Cade*, how long after the collision was it when you first saw the horse?—Two or three days.

Did I understand you that it was a very serious injury?—Yes.

A very serious injury?—Yes, a very serious injury; it was sloughing.

Sloughing?—Yes.

And you dressed it?—Yes, I did.

Now state with what did you dress it?—I don't know that I shall tell.

But I will make you tell. With what did you dress this sloughing serious wound?—I dressed it with tincture, and applied cold pads.

Why, you never saw it again for three weeks!—No.

Is that your usual way of treating very serious sloughing wounds?—Sometimes.

Ah, sometimes! Don't you always treat them so?—No; I see them oftener.

Pray, sir, were you aware that the horse hauled the cart-load of potatoes twelve miles into Bristol, and the cart twenty miles back to Worle, the same day after the collision?—Yes, I was.

And was the horse lame when you saw him?—No.

Not lame from such a serious injury?—No, he was not.

But was not the leg swollen very much?—No, it was not swollen at all.

But was it very much swollen when you saw it the second time, at the end of three weeks?—No, it was not.

Then, if the horse was not lame nor the leg swelled, why did you order a month's rest?—I ordered rest that the leg might gain strength before he was put to work.

Thus terminated the scientific or medical evidence for the plaintiff.

Mr. Edlin, council for defendant, called *Mr. Pearson*.

Mr. Pearson, what are you?—A farrier.

Did you see the horse which is the subject of this action after the collision?—Yes, the same day.

Where?—In Bristol; in Thomas Street.

After it had brought the load of potatoes twelve miles?—Yes, soon after it came in.

State to court and jury what you found amiss with the horse?—I found a wound inside the knee of the near fore leg, and some abrasions on other parts.

What parts?—Why, the fetlock, one of the legs, and, I think, some other parts.

What did you do to it?—I dressed it with tincture.

Was it seriously injured?—No.

Was it lame?—Not at all; I saw it walk and trot, and it was not lame.

Was it swollen?—No.

I suppose it had not had sufficient time to swell.—Yes, plenty of time, if it would swell at all.

Cross-examined by *Mr. Stone*.

Then, *Mr. Pearson*, I understand you that you are not a veterinary surgeon?—No. I am farrier.

Mr. Stone.—I suppose you have had a great deal of experience?—I have.

Then I suppose you do not think yourself inferior to a veterinary surgeon?—I have had a great deal of experience.

You told my learned friend *Mr. Edlin* how you treated the horse; now tell me more particularly how you would have treated him if he had been left under your care?—I would have repeated the tincture and bathed the wound with warm water, and have given the animal about eight days' rest.

Very good; then you thought about eight days' rest would be neces-

sary, did you?—Yes, I did; eight or nine days. I could not say to a day.

John Kent called.

Mr. Edlin.—Mr. Kent, you are so well known in this court, and, indeed, in other courts that I need not ask your name, nor whether you are a veterinary surgeon. We all know you well, and my learned friend Mr. Stone has shown this morning that he knows you particularly well.

[Mr. Stone refused to open the case while I was in court; and on the judge saying that I should remain, he sat down, and said that if I remained in court he would not open the case at all.]

Mr. Edlin continued.—Mr. Stone has given particular proof this morning that your presence gives him some uneasiness.

Mr. Stone.—Mr. Kent's presence does not give me any uneasiness. We all know him, and that he cannot be biassed; but this morning I did particularly object to his being present while I opened the case to the jury, because I know that nothing escapes his observation; and as he did not see the horse for twelve months after the accident, I was apprehensive that I might put him in possession of facts or statements which I am aware he knows well how to turn to account.

(Mr. Kent was excluded the court during Mr. Stone's opening the case to the jury.)

Mr. Edlin.—Mr. Kent, you did eventually examine the horse?—I examined it on June 29th of this year. I examined him very particularly, knowing that I should have to give evidence in this court.

Mr. Edlin.—Please to state to the court and jury how you could form a satisfactory opinion.

Mr. Kent.—Had there been a serious injury, with sloughing, there would have been a permanent cicatrix of the skin and loss of hair, and also thickening and hardening of the cellular membrane (the tissue which connects all parts together, and which butchers blow up or fill with air in a shoulder of veal), which, by being attached to the skin, would, when diseased, show that the elasticity of the integuments had suffered; but in this case there is no cicatrix, and I could pull up the skin between my thumb and finger as easily as in any other place.

Mr. Edlin.—Was there any injury so serious as to render the horse unable to work, and require such a long rest as you have heard of to-day?—I am certain there was not. It appears that the horse worked the same day, and travelled after the collision twelve miles with a load of potatoes, and nearly twenty miles home again, and that there was neither lameness nor swelling. This being the case, he could have continued his ordinary work without inconvenience to himself or damage to his owner.

Mr. Edlin.—Then, Mr. Kent, you are of opinion that the horse was not seriously injured, nor permanently depreciated in value?—I am certain that the animal was not injured to an extent either to interrupt his work or to affect his value.

Cross-examined by *Mr. Stone*.

Then, Mr. Kent, am I to understand you, that the horse was not sufficiently injured to render medical skill and attendance necessary?—I have stated that as a fact (not as an opinion), and I now state it again.

Then how do you account for Mr. Cade dressing it and repeating his visit?—I am not here to account for the acts of any one else but myself; but I have no doubt that Mr. Cade, having said that the horse was seriously injured, thought it advisable to dress, it to keep its owner quiet.

Mr. Stone.—Suppose you had been called in, what would you have done? Would you not have dressed it?—I should not have dressed it, but have told the owner that repeated dressing was unnecessary; that the horse might work as usual, and, best of all, I should have prevented this action.

Then what do you say to the evidence of Pearson, the farrier, who gave it as his opinion that the horse should have had eight days' rest, and you know that he also is a witness, as you are, for the defendant?—I say of Pearson that he is not a man of science, and his opinion and his evidence on this trial are of no value at all.

I suppose, then, you would say it was not worth a shilling?—I say it was not worth a straw; that Pearson is not a man of science; that his opinion rested on conjecture, and was the result of ignorance, and of no value whatever.

Then what do you say of Cade? Is he a man of science?—I am sure that his exhibition here to-day is not a very bright specimen of science.

Then now, Mr. Kent, tell me how you form such a wonderful and scientific opinion that the horse was not seriously injured, not having examined him until twelve months after the accident occurred?—I have stated that had it been seriously, that is, badly injured, I should have found a cicatrix, or scar, and also condensation of the cellular membrane underneath the skin, neither of which is the case, and I paid particular attention to the evidence of the plaintiff's witnesses.

Mr. Stone.—Stop! what have you to do with their evidence?—Nothing at all.

Mr. Edlin.—Then, Mr. Kent, you shall have to do with their evidence. I will give you a right. I ask you to state to the jury the evidence of the witnesses of my learned friend, and how you formed your opinion?

Mr. Stone.—Mr. Kent shall not make that statement.

Mr. Edlin.—Mr. Kent shall.

The Judge.—If Mr. Edlin asks Mr. Kent a question, he has a right to answer it.

Mr. Edlin.—Now, Mr. Kent, answer my question.

Mr. Kent.—I have stated how I formed my opinion on examining the horse. From the statement of plaintiff's witnesses, it is clearly proved that the horse was not lame, that there was not any swelling of the part, which I am certain could not have been the case had there been a serious injury, nor could the horse have worked twelve miles into Bristol with a load of potatoes, and twenty miles out, the same day.

Mr. Stone.—You heard Mr. Cade, who saw the horse, say that there was sloughing.—I did.

Mr. Stone.—Then what do you say to that?—I say that if Mr. Cade be a man of science, he must have left his science behind him, and that no man of sense and science would have made such an assertion.

By a *Juryman.*—Mr. Kent, could there have been sloughing in so short a time?—No. Nor could there have been sloughing at all, unless caustic had been applied, as it was but a mere scratch of the skin.

By the *Judge.*—Mr. Kent, had there been so serious an injury as to cause sloughing, I should suppose that warm-water bathing, and poultices, would have been necessary?—Yes, your honour, and daily attendance. A tincture-dressing, and cold pads, and a visit at the end of three weeks, would not do in a serious case.

The Judge.—That was my opinion when I heard the evidence of Mr. Cade.

Mr. Kent.—It would not, your honour; but from examining the horse and hearing the statement of Mr. Cade and others, I come to the con-

clusion that it was a mere scratch, and not a serious injury, not impeding the action of the leg, nor depreciating the value of the horse, and not interfering with the horse's capability of working, if required.

This concluded the medical or surgical evidence for the defendant.

The jury returned a verdict for the *defendant*, and thus ended a trial which lasted from 11 o'clock in the morning till 8 at night, occupying nine hours; and in which thirty-three witnesses were examined.

The *Judge* said he should think the jury wished for no summing up, but if they did he would do so in full; yet, as it would take him two hours, by their consent he would notice only such particular parts as required observance from himself.

This statement is from recollection.

JOHN KENT.

BRISTOL; Dec. 13th, 1858

ALLEGED CRUELTY TO A PONY.

Prosecution by the ROYAL SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS.

Extracted from the 'Manchester Times.'

The case of alleged cruelty to a pony, which has formed the subject of some correspondence in our columns, was inquired into at the City Police Court, September 14th, 1858, before C. J. S. Walker and William Ross, Esqrs.

Mr. Mayhew, of Wigan, instructed by the Royal Society for the Prevention of Cruelty to Animals, appeared for the prosecution; and *Mr. R. B. B. Cobbett*, of Manchester, for the defendant.

Mr. Mayhew said, the information was laid by George Chas. Smith, one of the officers of the society, against John Hindle, warehouseman, for having, on Saturday, the 14th of August, cruelly over-driven a pony. It seemed that about five minutes past four o'clock on the morning of that day defendant was seen to leave the Boar's Head, Hyde's Cross, in what was called a trotting gig-trap, used by sporting men. He proceeded to Liverpool and returned to Manchester about half-past two o'clock in the afternoon, having gone a distance of seventy-two miles in ten hours and a half, which included a stoppage of an hour at Liverpool, and a similar stoppage at Warrington. He would not weary them by following the progress of the journey, but, upon reaching Manchester, about half a mile from the end of the journey, the plaintiff was seen by two men driving the pony, which was in a very distressed state, and the animal could scarcely get along. After defendant got to the Boar's Head stables, the pony was taken to a veterinary surgeon named Unsworth. The pony struggled until six o'clock the following morning, and then expired. The pony was afterwards taken to some yard and was examined, when the stomach was found to be ulcerated. There was congestion of the lungs, and the diaphragm was ruptured. Both the congestion and rupture would, no doubt, be produced by over-driving. He would not make any remarks upon generalities, but would take this as a special case; for the society he represented having, to some extent, the functions of public prosecutors, did not desire to do more than simply present the facts. When the case had been heard, probably the bench would consider it was a case of cruelty, and that the humanity of others in this great city ought not to be offended by sights of this description.

Thomas Cummings, ostler at Mr. Ryder's, said he saw Mr. Hindle, on

Friday, the 13th of August, with Mr. Harrison, the owner of the pony, at the stables. At five minutes to four on Saturday morning, defendant fetched the pony, and took it to the Boar's Head. Hindle said he was going to do a feat. He was going to Liverpool and back with the pony.

Police-constable Marshall proved that he saw the defendant leave the Boar's Head, with the pony and trap, at five minutes past four on the morning of Saturday, August 14th.

Patrick Smith, ostler at Mr. Garner's, Lime Street, Liverpool, said Hindle arrived there on the day named, with a black cob pony, at five minutes past nine in the morning. He stayed an hour, and then left.

Cross-examined.—The pony was in the stable during the hour's rest, and did not seem in the least distressed. Witness had been ostler twelve years.

John Wilson, ostler at the Nag's Head, Warrington, said Hindle stopped there half-an-hour on his way to Liverpool. He reached there on his return about twelve o'clock, and the pony had a pound of flour in some water and a pint of ale. There were then people in the yard looking on. As soon as defendant got the pony out of the yard he started on a jog trot down the street.

Cross-examined.—It is the custom to give horses the dose mentioned when they are out on journeys. The pony did not appear to be more distressed than is usual for horses on long journeys. Had seen horses a deal more distressed.

William Craig, cab-driver, saw the pony pass along Blackfriars Street, Manchester, on the return from Liverpool. It was going a walking pace, and seemed jaded. It was between two and three in the afternoon. The pony was quite tired, and witness made a remark about it at the time.

Cross-examined.—Had seen many horses tired before. The pony perspired very much.

John Griffiths, cab-driver, also saw the pony return. It was very much fatigued and distressed. The driver was pulling at it in different methods to get it along, but the pony did not go any faster. The pony seemed done up, and could scarcely get any further. The driver did not strike, but pulled the pony.

Cross-examined.—Had seen similar pulling done hundreds of times before.

George Charles Smith, agent to the Royal Society, said Mr. Hindle, the defendant, made a statement to him about this affair. He told him he had driven the pony from Manchester to Liverpool and back in ten hours and a half; that the bet was made that he did not do it in eleven hours, and that therefore he had won £10.

(Mr. Cobbett designated this witness "the spy of humanity;" but Mr. Mayhew said he ought not to be called that, as he had only detailed a conversation he had with defendant.)

John Bell Unsworth, veterinary surgeon, of Manchester, said he had been summoned to give evidence. Received the summons at the Boar's Head, last Friday. Believed he had had an interview with Mr. Cobbett on the subject. On the 14th of August, saw the pony in the stable at the Boar's Head. Could not say what state it was in, as he only saw it over the heads of other people. Saw it again at four o'clock the same afternoon, at his own stables. The pony was then blowing very badly. Gave it medicine, and was with it until about two the following morning. It died about six o'clock the same morning. Saw it dead soon

after. Saw the carcase subsequently in the horse slaughterer's yard. Found a slight congestion of the lungs, rupture of the diaphragm, and ulceration of the stomach. The latter could be produced by stimulating agents, and might show itself in a few hours. Over-driving might produce rupture and congestion. Should expect a horse suffering from congestion to be blowing hard.

Cross-examined.—There was only slight congestion, the apex of the lungs just tinged. That would not cause blowing to an excessive degree. Violence of any kind, either before or after death, would produce the rupture—such violence as shunting off a cart after death. The intestines protruding through the ruptured diaphragm and pressing on the lungs might produce congestion, though he did not mean to say it was so in this case. Did not think the rupture and congestion were the cause of death. There was considerable inflammation of the mucous membrane of the stomach, and this must have produced considerable ill to the pony. If poisonous or other foreign substances had been introduced they might have caused death. It appeared most likely, to his mind, that the pony died from this cause. If the pony had been driven to death, the air-cells of the lungs would have been full of stagnant blood.

Re-examined.—Was asked at first if the pony was poisoned, but would not give an opinion. Recommended them to get the stomach analysed. Did not discover the presence of poison. Thought a pony could travel seventy miles with poison rankling within it. Pledged his opinion that this was practicable. Could not say if it was mineral or vegetable poison. Rupture and congestion would not be sufficient to cause death. (Upon the question being repeated, witness said they would be sufficient.) Did not come to any conclusion as to the cause of death. Thought at the time it was congestion and rupture; both were the probable consequences of over-driving. Had been accustomed to horses a long time, and did not think seventy miles in ten hours an extraordinary feat, even deducting two hours for stoppages. Should say it was moderate driving.

Thomas Lewis, ostler to previous witness, proved that the pony was taken from his master's stable.

John Vinville, horse slaughterer, stated that he opened the carcase, and found the symptoms described by Mr. Unsworth. The diaphragm was hardly ruptured. Frequently this took place after a horse had been dead several hours. Could swear the rupture in this case took place after death. There was very little congestion. The pony must have died when it did, whether driven or not; that was a certainty. Could not say why he was certain the pony must have died on that particular day.

Mr. Mayhew said that was the case, and the bench would see the difficulties he had had to contend with.

Mr. Cobbett contended there was no case for the magistrates to consider. The surgeon called by the prosecution said the driving was nothing extraordinary. It was contended the distance was too great, but not a single question had been asked on that point by the prosecution.

Mr. Walker observed that there must have been something extraordinary, or no bet would have been made.

Mr. Cobbett replied that this remark, if it would hold on this case, would equally apply to horse-racing. A man had a right to drive what distance he pleased, and in as short a time as he pleased, unless it could be established that such driving amounted to cruelty, and he

submitted that there was not in this case any evidence of cruelty. The prosecution was *Punch's* prosecution, and his friend opposite was the victim of *Punch*, who had called attention to the subject, and had inserted an extraordinary picture at the head of the paragraph. He believed if the stomach had been examined at the time it would have been found that the animal was poisoned, but then this prosecution would not have been heard of.

For the defence, Mr. Cobbett called *Mr. Gibson*, veterinary surgeon, who bought the pony last year in the Isle of Man, and sold it to Mr. Harrison. He said he examined the pony after death, and found extensive ulceration of the stomach, the diaphragm ruptured, and a slight tinge extending about an inch round the apex of each lung. The congestion could not possibly have caused death. Ruptures of the diaphragm most frequently occurred after death. If they occurred during life bleeding took place, and there was none in this case. Rupture during life would cause hard breathing and congestion of the lung. Could not, from the symptoms in this case, account for death, except it was caused by the introduction of some poisonous substance. The ulceration was very recent, and might have commenced during the journey to Liverpool. Had been acquainted with horses all his life, and was almost born on horseback. Did not think seventy miles an extraordinary feat for the pony to perform. Believed the bet was made because the pony was ugly looking, and could not carry flesh. Witness bought the pony last year, in the Isle of Man, for £20, on account of its powers of endurance. Took him and four others sixty miles one day: it was then sent out again on another job. After Harrison bought the pony he wanted £60 for it.

Cross-examined.—Had conversed with Unsworth about the case at Mr. Cobbett's office. Charged half-a-guinea for examining the pony. Could not tell the cause of death. Had known the diaphragm to be ruptured by spasm of the stomach and bowels. Spasms would be produced by over-exertion. Never saw such an extraordinary case as this in his life. Was satisfied the pony did not die from over-exertion. If the pony had been his, and could not have done that distance, he would have shot him.

The magistrates consulted a few minutes, after which Mr. Walker (as chairman) said the case was a very proper one for investigation, but after all they had heard the summons must be dismissed.

MACCLESFIELD COUNTY COURT.—THURSDAY, Oct. 28th, 1858.

(Before JOSEPH ST. JOHN YATES, Esq., Judge.)

STANLEY v. HULME.

Warranty of a Horse.

This was a jury case, and was tried before the following jurymen: Messrs. John Heapy, Bosley, miller; James Grantham, Adlington, farmer; John Daniels, farmer, Rainow; Thomas Maddock, Park-lane, draper; and William Dale, Eaton, farmer.

Mr. Parrott said the action was brought by the plaintiff, a working man, against the defendant, a farmer, living at Ridge Hill, Sutton. It was to recover £14 16s. for a breach of warranty on the sale of a horse.

On the 13th March, the plaintiff bought from the defendant for £34 a black gelding, the latter giving him a warranty that it "was sound and a good worker." Plaintiff worked the horse for some time, when it became ill, and he decided upon parting with it. Having been told that the horse had got side-bones, he communicated the fact to the defendant, who said that the defect was not side-bones, but that it was merely the peculiar formation of the animal's foot, which its dam also possessed. The plaintiff, in June, entered into a contract with Mr. Clewes, of Manchester, to sell the horse; and for this purpose it was taken to Manchester and examined by a respectable veterinary surgeon, Mr. Worthington, who pronounced it to be unsound from having side-bones. The consequence was, Clewes refused to purchase it. The plaintiff then took it back to the defendant, who refused to take it. On 17th September, the plaintiff sold the horse for £20 5s., the expense of the sale reduced that sum to £19 4s., which was the sum realised on the sale by the plaintiff, who now sought to recover the difference between the sum he gave for it to the defendant and the sum realised by the sale. He (Mr. Parrott) should call persons to prove that the horse was suffering from side-bones when the warranty was given; therefore he confidently anticipated a verdict for his client.

The plaintiff was then called, and stated that he bought the horse from the defendant on 13th March, on a written warranty that it was sound and a good worker. When he was about selling it to Mr. Clewes he was bid thirty guineas for it, but upon Mr. Worthington saying it was not sound, Clewes would not have it at all. When he took it back to the defendant the latter said he should not lose by it, he would get him a customer. After detailing the same particulars as those mentioned by Mr. Parrott, he was cross-examined by

Mr. Cooper.—Is not much acquainted with horses, and never had one before in his life. Used it about a week at Talk-o'th-Hill for drawing coals. Afterwards lent it to his brother, who used it for agricultural purposes for about a month. Then brought it to Macclesfield and used it for any sort of a carting job he got hold of. Used it in drawing manure to the Moss. The Moss is an awkward place for a cart and horse. Does not recollect telling any one, through fear, because the horse was up to its knees in mud, to lead it, as he was afraid. Continued to work the horse till work became scarce. Found out then that it was not sound. Took it to Mr. Maxfield, veterinary surgeon, of Congleton, on 10th July. Mr. Bullock, of Macclesfield, did not see it till 23d June. It was driven in a spring cart to Buxton twice. It was afterwards taken to the Potteries and Wharford as a hack. It was sold by auction on 27th September. Plaintiff's brother bought it, giving for it £20 5s. Saw no difference in its legs when it was sold to what they were when he bought it.

Mr. Isaac Worthington, M.R.C.V.S., said he examined the horse at Manchester, and found it had got side-bones, or ossification of the lateral cartilages of the foot. Had not the least doubt that ossification was in existence at the time the plaintiff bought it.

Cross-examined.—A sudden change in the working of a horse, from light agricultural work on soft ground, to heavy work, such as drawing coals along the public streets, would be very likely to produce side-bones, as the complaint arose from concussion. In the horse in question, the side-bones did not arise from malformation of the foot.

Mr. J. L. Hordern, M.R.C.V.S., was decidedly of opinion that the horse had side-bones to a considerable extent. They must have been in existence on 13th March, and long before.

Mr. Knight, auctioneer, said the horse was sold, after being duly advertised in the 'Macclesfield Courier.' There was a great number of people at the sale, and competition ran keenly from £10 to £20 5s., at which sum it was knocked down to the plaintiff's brother.

This was the plaintiff's case.

Mr. Cooper said, upon the evidence of the plaintiff himself, who admitted that there was no difference in the horse's legs at the time he bought it and when he sold it, he should submit that there was no case to answer; inasmuch, as if side-bones were in existence on the 13th of March, it was a patent defect to which the warranty did not extend; and also that the plaintiff had waived the warranty by the length of time he had the horse in his possession—six months.

His Honour said, a patent defect which did not extend to a warranty must be something like a man warranting a horse to be sound and perfect when it had only three legs, or was without a tail. It had been decided that the gutta serena in a horse's eyes was included in a warranty, because the defect was not palpable; but if the eye affected was out altogether, or the socket nearly empty, then it would be a patent defect. Side-bones were pretty much of the same description. With respect to the waiver of the warranty, that was solely a question for the jury.

Mr. Cooper then forcibly addressed the jury for the defence, contending that, if it was true that the horse had got side-bones, they had been brought on solely by the manner in which the plaintiff had worked the animal. He bought a horse for one purpose, and used it for another; therefore he ought to bear the consequence. If every man who bought a horse was to keep it and use it as he liked for six months, and then come into a court of justice to make the seller take it back again or pay the difference if a sale was effected, there would be no end to such unjust claims. But he should bring forward evidence from as respectable a veterinary surgeon as either *Mr. Worthington* or *Mr. Hordern*, who would state positively that the horse could not have been affected with side-bones when the plaintiff bought it, and that at the time of the purchase it was as sound as ever it was, the plaintiff having a short time previously refused to take £27 10s. for it—this circumstance alone showed the value of the horse, and its condition in the opinion of men well able to judge.

Mr. Frederick Bullock said he was a veterinary surgeon. Examined the horse on the 23d of June. It had a peculiar formation of the foot, in the same way as its dam. It was perfectly sound then, and is yet. There was no existence of side bones in the animal at all—it was the natural formation of the foot.

Cross-examined.—Would swear that the horse had not got side-bones at all. Knew what side-bones were. Never said to plaintiff whilst examining the horse, "Well, this will be a lesson for me for life; there are side-bones in the animal's foot, but I never knew they were considered unsound." Would swear he never said so.

John Hill, farm servant, knew the horse well, and never considered anything was the matter with it.

Frederick Dale offered the plaintiff £27 10s. for the horse; he wanted more. Had examined the horse, and was satisfied nothing was amiss with it. Would give £27 10s. for it yet.

—*Jackson*, a blacksmith, had shod the horse often, and never observed anything the matter with its feet.

Mr. Ralph Bullock, yeoman, Macclesfield Forest, said the plaintiff was his nephew. It was partly on witness's recommendation, after

looking at the animal, that plaintiff bought it. Did not examine it particularly close, but considered it was all right for anything he could see. Had been a judge of cattle for three or four agricultural shows.

This was the defendant's case, and Mr. Parrott having replied, his *Honour* summed up, leaving it entirely to the jury to say whether they thought the evidence of the doctors on one side more worthy of credit than that of the other; for when doctors disagreed, it was difficult to decide.

The jury retired, and gave a verdict for the plaintiff, of £10 and costs.

ARMY APPOINTMENTS.

WE have the pleasure to announce that Mr. John Field, M.R.C.V.S., has received an appointment as veterinary surgeon to Her Majesty's army in India.

OBITUARY.

DIED, on board the "Simla," off the Island of Socotra, on the morning of the 5th ult., Mr. Charles Henderson, M.R.C.V.S., son of the late Alexander Henderson, veterinary surgeon to the Queen Dowager. He had served in the Bengal army seven years, during the greater part of which time he had the charge of the stud at Saharanpore. We are informed by his brother that at the period of his death he was on his way home on medical certificate. The immediate cause of death appears to have been effusion on the brain. He was in his 28th year, and obtained his diploma May 20th, 1851.

ERRATA IN NO. 373.

- Page 10, line 23, *for* crib-halter, *read* web-halter.
 „ 16, „ last but 3, *for* that, *read* the.
 „ 24, „ 5, *for* during the fit, *read* out of the fit.



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Communications and Cases.

TENOTOMY PERFORMED ON A FILLY.

By Assistant-Professor VARNELL, Royal Vet. College.

THINKING that the following case may prove interesting to many of the readers of the *Veterinarian*, I am induced to forward it for insertion.

In September, 1858, I was consulted respecting a bay filly, six months old, which had a congenital deformity of the off fore foot, and was asked if I thought anything could be done to remedy it.

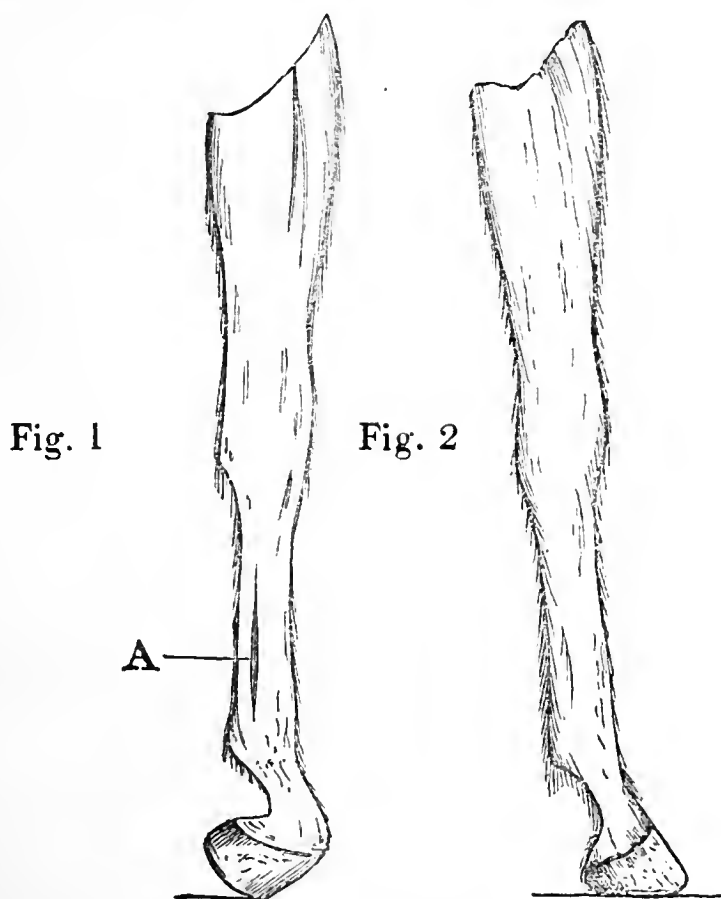


Fig. 1 will give an idea of the deformity that existed before the operation.

Fig. 2 shows the state the limb is now in.

Before replying to the inquiry, I was desirous of ascertaining as much as I could of the history of the case. I was informed that the foal at birth showed very little of the defect, but in a short time afterwards it was noticed to walk on the toe of the foot more than natural; and at the age of about two months, this peculiarity had so much increased, that the little creature could not get the heel to the ground, but was obliged to throw its weight on the front of the foot, which caused it frequently to knuckle over. It had continued gradually to get worse; and at length was brought to the College, for us to improve, if possible, the position of the limb.

To effect this, it was thought advisable first to try some mechanical contrivance, so that by time and further development a more desirable form might be obtained. Although this was considered not very probable, nevertheless means were resorted to for its accomplishment. The hoof was pared to a more suitable shape, and a small shoe, having a projecting toe-piece, about three quarters of an inch long and slightly curved at the toe, was applied to the foot. It was, however, soon found, from the extreme flexure of the pedal bone upon the os coronæ, that the foal could not throw any weight upon the posterior part of the foot; and in attempting to do so, from the increased leverage caused by the projecting toe-piece, the nails were drawn out of the hoof, and the shoe consequently pulled off.

Finding that this course of procedure was not likely to be of any service, it was abandoned at the end of about a fortnight, and the operation of tenotomy determined on.

Before describing the operation and its results, I will briefly state the immediate cause of the deformity. A reference to the woodcut will indicate to the anatomist its nature. Seeing that the pedal bone was acutely flexed, in a backward direction, upon the os coronæ, it was obvious that the tendon of the flexor pedis muscle, from being congenitally too short, was the sole cause of the deformity; and to bring about an alteration in the relative position of the two bones, one with the other, the tendon above alluded to must be lengthened, which could only be effected by its being divided, and the ends kept apart until the intervening space should be filled up with new material. The operation of tenotomy is almost a painless one, and also very simple, especially at the age of the filly in question—six months—which in my opinion is the best age that operations for congenital deformities can be performed. The foal, however, belonged to a lady, and being a great *pet*, she was desirous

that the operation should be performed with as little pain to the animal as possible. It was therefore placed under the influence of chloroform. To accomplish this, the foal was cast in the usual way, and the agent applied to its nostrils, which soon produced anæsthesia, this being evinced by its not flinching when the skin was pricked with a pin. Three of the animal's legs were secured, the one to be operated upon being held by an assistant. The tendon was divided by a subcutaneous section, midway between the knee and fetlock-joint (A, fig. 1). I preferred operating on the inner surface of the leg rather than the outer, in order that the small cicatrix which might be left should not be so apparent. The limb being slightly flexed by the assistant, enabled me to feel the space between the two tendons—the perforatus and perforans. Into this space I inserted the knife, which was a very narrow one, flatwise, pushing it no farther than the opposite side of the tendon, and taking care not to pass it through the skin on the other side of the limb. I now turned the edge of the scalpel against the perforans tendon—the one I wished to divide, at the same time directing that the limb should be extended; this rendered the tendon tense, when with a slight sawing movement of the knife it was at once divided. This was indicated by a jerk, and also by the facility with which the pedal bone could be moved upon the os coronæ.

The operation was performed with scarcely any loss of blood, and only a very small external wound was made. In a few minutes after the operation the filly was conscious and again on her legs. A light calico bandage was placed on the limb over the wound, which was ordered to be kept wet with cold water, and she was led to her box. No untoward circumstance whatever supervened, with the exception of her having a slight attack of influenza, which retarded the reparative process for a short time; as soon, however, as her health returned, it progressed very rapidly; and in about six weeks after the tendon was divided, the intervening space had become filled up, and was apparently consolidated. In her walk she placed the foot fairly upon the ground. There was no perceptible enlargement where the operation was performed, and the small cicatrix could only with some difficulty be detected.

To the above statement I will only add, that about eight years since the dam of this filly became lame of the off fore foot, from disease of the navicular bone; and she continued so, more or less, for about two years and a half, when the pain and lameness were so great that, upon being con-

sulted, we advised that the nerves going to the foot should be divided, which was done. After this she continued to go comparatively sound for about three years, when she again became lame. It was now determined to breed from her; and the filly, whose case we have recorded, was her first produce. Now, it becomes a question, and a very important one to breeders of horses, whether the disease in the off fore foot of the mare had any influence in the production of the deformity of the off fore foot of the foal? It would be well if the members of our profession, and also breeders of horses, would collect information sufficient either to negative or confirm this point, for of course it would apply to other congenital deformities.

POISONING OF PIGS WITH COMMON SALT.

By W. ROBINSON, M.R.C.V.S., Tamworth.

GENTLEMEN,—When I had the pleasure of meeting Dr. Alfred Taylor and yourselves at the Court of Examiners of the R.C.V.S., I mentioned the circumstance of seven pigs having been poisoned by common salt taken in their food. Dr. A. Taylor then stated that he had made an analysis of their stomachs and the food, and found a large quantity of salt, but no mineral poison. From his observations I was led to think that these were the first cases of pig poisoning by common salt which had come under his notice.

In accordance with my promise to send you a short history of these cases, I will endeavour briefly to state the facts as they occurred. On the evening of the 3d of November, 1858, I was hastily called to Byrkely Lodge, to examine and give an opinion respecting seven pigs, belonging to M. T. Bass, Esq., M.P. for Derby. Four of them were store pigs, and three fat ones. Three of the store pigs were found dead in the morning, and the other one, suffering from spasm and pain, was destroyed. The three fat ones were slaughtered in the usual way. From their appearance and symptoms being like the others, it was supposed that they were labouring under the influence of some deadly poison, which had been maliciously mixed with their food on the preceding night.

Upon this statement I examined the three fat pigs and their stomachs, and the latter organs showed ample traces of *acute gastritis*.

The four stomachs of the pigs which died were in a similar

condition, and were sent to Messrs. Wood and Mathews, of Barton, for analysis; and as, when Mr. Bass left Barton, at six o'clock, their labours were not over, instructions were forwarded for Mr. Taylor, veterinary surgeon, of Barton, to bring their report to Byrkely Lodge that evening.

While waiting for this report, I stated without hesitation, that the whole of these pigs had been destroyed by common salt, grounding my opinion on the state of the stomachs I had examined, and other similar cases which had fallen under my notice. Mr. Bass and others said it was not so. I inquired if any brine had been sent out of the house by the cook to the pigs? I was answered in the negative. I then asked to see the man who prepared the food and fed the pigs the night before; on his appearance I inquired if he fed the pigs last night. He said "Yes." "What did you give them?" "Boiled potatoes, barley meal, and wash from the cistern." "When did you boil the potatoes?" "Two or three weeks back." "How came you to do that?" "We had a quantity of potatoes we thought would not keep sound." "Do they keep when boiled?" "Yes, with the addition of common salt to them when they are broken down." "Had the potatoes you gave the pigs last night been prepared with salt?" "Yes, in the usual way." "What quantity of salt do you use to a bushel of potatoes?" "I cannot say; we spread it upon them with a shovel, putting a layer of potatoes and then a layer of salt." Surely this was very strong evidence in favour of salt being the poison!

Shortly after this, Mr. Taylor arrived from Barton, with the report of Messrs. Wood and Mathews that they had utterly failed to detect any mineral or other poison. This circumstance, of itself, was a great relief to Mr. Bass and those present, although they could not believe that salt had been the destroying agent.

Upon this Mr. Bass wisely resolved to send the stomachs and food to Dr. Alfred Taylor, for analysis. As I understand that Dr. Alfred Taylor has kindly furnished you with a copy of his report, you will perceive that he also fails to find any mineral poison.

I cannot now refrain from stating that the first cases of this kind which came under my notice, and I then made a post-mortem inspection, happened as far back as June, 1807. These arose from the brine of a large dairy establishment finding its way into the pigs' food. All the stomachs displayed the same peculiar marks of acute gastritis so faithfully described by Dr. Alfred Taylor, in his report of Mr. Bass's pigs. I am, Gentlemen, yours truly.

To the Editors of the 'Veterinarian.'

(COPY OF DR. TAYLOR'S REPORT.)

Report of Analysis in the Case of Two Pigs.

The articles removed from the box delivered to me by Mr. Wood, on the 6th November, 1858, consisted of—

1. The stomach of a pig cut open.
2. An entire stomach, with the food in it.
3. A sample of food from the pig-cistern.
4. A sample of food from the trough.

1. **THE STOMACHS.**—The stomach (No. 1) was congested on the outside, and generally inflamed on the inner or mucous membrane. Towards the greater end of the stomach there was an extensive patch of inflammation of the size of the palm of the hand. The reddened or inflamed portion was covered with patches of effused blood, and with a quantity of mucus, the product of acute inflammation. This inflammation had in one part almost reached a gangrenous condition. It affected all the coats.

The stomach (No. 2) presented on the outside a similar congestion.

Analysis.—The mucus and blood were scraped from the surface of the stomach, and examined by the usual processes for such irritant poisons as would produce the appearances, including arsenic, corrosive sublimate, tartar emetic, oxalic acid, and sulphuric acid. There was no trace of these, or of any noxious matter. The only mineral ingredient found was common salt in rather large quantity.

The inflamed portion of the stomach was removed, cut to pieces, and after being tested in an aqueous and acid decoction, was dissolved in hydrochloric acid and water, and examined by Reinsch's process for arsenic and other mineral poisons. There was no trace of any poison in the coats or substance of the stomach.

THE FOOD.—The cistern food (No. 3) had a sour smell and an acid reaction. It had obviously undergone fermentation. It was first tested for oxalic and sulphuric acid, and subsequently for arsenic and other mineral substances by Reinsch's process. No poison was found, but the liquid contained a large quantity of common salt.

The trough food (No. 4), examined by similar processes, gave like results, with the exception that the amount of common salt dissolved and diffused through the food was less.

CONCLUSIONS.—From these results it is my opinion—

1. That the pigs have died from inflammation of the stomach in a severe form (acute gastritis).
2. That the inflammation has not been caused by any mineral poison administered to them.
3. That the inflammation has probably arisen from natural causes, and may have been latent until shortly before death, when the symptoms assumed an aggravated form.
4. That the appearances were similar to those caused by irritant poison, and that without an analysis no opinion of the cause of death could have been safely given.

REMARKS.—I have known several instances in which pigs have suffered from the effects of a large quantity of common salt, when it had been thrown into the trough and loosely mixed with the food. The quantity of salt, however, in this case was not excessive, and the trough food contained less than the cistern food. The cause of death may be explained without reference to the food, but, at the same time, I may state that common salt, in large quantity, is an irritant, and in at least two instances has destroyed human life.

(Signed) ALFRED S. TAYLOR, M.D., F.R.S.,
Professor of Chemistry and Medical Jurisprudence
in Guy's Hospital.

13, ST. JAMES'S TERRACE,
REGENT'S PARK; *November 13, 1858.*

Additional Note.—From the actual quantity of common salt found in the stomach, it would have been impossible to assign death to this substance acting as an irritant poison. All that could be said from the result of the analysis would be, that assuming the salt found in the stomach to have been the residue of a very large quantity taken by the animal, this might account for the inflammation of the stomach and death. In two instances, referred to me some years since, there was strong reason to believe that pigs had been destroyed by common salt acting as an irritant poison.—A. S. T., *Jan. 28, 1859.*

ON THE PURCHASE OF REMOUNT HORSES FOR INDIA, AND THE ESTIMATION OF THE PROFESSION.

By a "PRACTICAL PUPIL."

IN the last June number of *The Veterinarian* is a letter from Mr. Gibton, M.R.C.V.S., in Australia, respecting the

arrival there of Colonel Robbins, to purchase and forward remount troop horses for India, without the assistance of a veterinary surgeon. The value of the profession, therefore, it would appear, is still not yet appreciated nor acknowledged, even in such an important duty as the purchase of horses. And I am sorry to be obliged to add that the equally important matter of veterinary hygiene on board ship does not receive due attention. I know Colonel Robbins well. He is an active gentlemanly man, having a great fondness for horses, but he is not a veterinary surgeon, and, therefore, although actuated by the best intentions, he will be sure to make some mistakes. The consequence of this course of procedure is, that the mortality among the Australian horses shipped, so I am informed, is twenty per cent. against our two per cent. And all this while, I understand, there are five unemployed veterinary surgeons in Calcutta belonging to revolted regiments. I always put on board every ship a horse-medicine chest, with doses of prepared medicines, labelled ready for use, and the required simple instruments; also the necessaries for the treatment of sick horses, with *instructions* suitable for unskilled persons for the treatment of those diseases likely to occur on board ship. This, I hope, is useful, for by accounts kept and reports made on the return of persons put in charge, those cases of disease do occur, and the remedies I have recommended, according to the symptoms shown, have had the desired effect; I consequently do not think that it is presuming too much to conclude that our arrangements have been of service in producing the low rate of mortality among the horses; which, of course, is a great saving to the Government, and an advantage to the army in every respect.

Mr. Gibton's sensible and excellent letter brings forward the subject in rather a strong point of view, showing the great difference experienced in the shipping of horses from this place and Australia, and is one which the heads of our profession — I mean the president and council, of the Royal College of Veterinary Surgeons—ought to consider, for it is a vital one. Are the members of the veterinary profession, as a body, useless and unprofitable as Government servants to the public, or not? If they are, recommend their non-employment. But I believe they constitute a most useful and valuable body, and one which has never yet been employed to the full extent of its usefulness. This, then, should be acknowledged, and brought prominently before the public; and the profession, as a consequence, would derive the benefits which ought to accrue from its labours, while their ser-

vices will be considerably extended. More especially in a military point of view are we of importance ; and as it regards the agricultural community, surely we are likewise of some value to them, since several millions' worth of the most precarious of all property, in the shape of live stock, is dependent on our judgment. I have seen letters in this colony representing losses to the extent of 600 and 900 lambs belonging to farmers, most of which, I believe, might have been saved by instituting sanatory measures.

The Royal Agricultural Society of England, whose motto is "*Practice with science*," acknowledges the value of our profession, and has honored itself and us by appointing Professor Simonds to responsible and important national duties ; and this is done by practical, wealthy, and highly-educated gentlemen, who have immense property of their own at stake. Modesty may be, and no doubt is, a sign of merit ; but a proper want of confidence is a great defect in an individual, and I believe it often deprives the public and the public service of much that is valuable ; but in a body recognised by the Government, and having a charter granted to it, I think it most reprehensible. It ought to come forward, and in the public prints, as the *Times*, the *Field*, or *Bell's Life*, assert its rightful position, as well as in its own Journal. Above all, let the standard of its education and the gentlemanly bearing among its members be always kept high, for thus, and thus only, will it be enabled to take its place among the other professions.

Colonel Apperley, whom Mr. Gibton refers to as "Captain Abernethy," is known to be a most excellent judge of horses, and, I believe, I may also say of veterinary surgeons too. But he is more than this even ; he is acknowledged, and will ever be remembered, as a *scientific* admirer of the horse. His father, the celebrated "Nimrod," always recommended and made use of the *practical* veterinary surgeon, whenever he wanted and could find him, and so does his son, whose experience in military matters connected with the horse, likewise of breeding and purchasing, has undoubtedly been more extensive than any other man's in the world ; therefore, his practical experience is greater, especially in the shipping of them for long voyages, and in latitudes inimical to health ; while his arrangements for ventilation, and all other questions connected with the economy of the horse in an *£ s. d.*, as well as a scientific view, have always proved most beneficial to the Government. He, however, needs not my poor testimony to his abilities.

COMMUNUTED FRACTURE OF THE TIBIA OF A HORSE.

By H. W. DYER, M.R.C.V.S., Waterford.

ON Tuesday, the 7th of December, 1858, an aged black cart-gelding was employed to draw a log of timber from a yard in this town, and not liking his employment he commenced kicking furiously, and became entangled in the chains used for the purpose of draught, when the hind leg being encircled by them, he was so violent that the carter had much difficulty in extricating him. It was, however, at length accomplished, and the suffering animal led to my place. The injuries he received were of such a nature that he could use only three legs, the near hind leg being totally useless. Upon examination I could discover no actual fracture to have taken place, although about the centre of the tibia, as I suggested to the parties in the yard, so much injury had been inflicted that it might turn out to be one; but at that time the muscles of the thigh were acting with such power that I could not, after the closest investigation, ascertain that any fracture of the limb existed.

After this most minute examination, I directed that the horse should be left with me, so that I might watch the case and resort to such means as were considered by me necessary under the circumstances. I therefore had him led into a large stall in my long stable, and there he remained until the following Sunday, when I perceived unmistakeable symptoms of fracture, viz., spasmodic action of the muscles. Matters went on in this way up to Tuesday morning, when it was found that the bones had become disunited, and the limb was held suspended. I wrote to the owners, stating that the fracture had now become complete, and wished for their instructions as to the disposal of the horse.

I should, perhaps, have before stated, that I had written to the firm, giving the result of my examination of the injured limb the day the accident happened. To my utter astonishment I received a letter by post on the next day—Wednesday—stating *how greatly surprised they were to hear that such an accident had occurred to the horse when under my charge, at my own place*, and begged to know the particulars, &c. Their request was immediately complied with, and I wrote a full description of the way in which the injuries were received, as made known to me by the proprietor of the timber yard, who was an eye-witness to the whole affair.

From the manner in which I was treated, I invited several medical gentlemen to inspect the limb after its removal from the body. Twelve gentlemen did me the honour of paying me a visit, all of whom were much pleased with the morbid specimen, and expressed themselves in such terms as led me to believe the case was to them a most interesting and even a novel one. The following is a description of the fracture as it now may be seen in its dried state. About the middle of the tibia appears to be the principal part which gave way from the pressure of the chains, where a triangular piece of bone, five inches from point to point, and extending across to the inner edge of the bone, is free. A crack, four inches in length, runs up from this towards the head of the bone, and another is on the inside, six inches long. Numerous small pieces of bone are also present. The edges of the various pieces of bone are smooth from absorption, and probably friction. Large quantities of fibrine were thrown out to effect reparation. The periosteum was increased in thickness to full half an inch.

This part of the tibia being formed so as to give attachment to muscles, will account in some measure for the tenacity with which the bones held together.

I do not presume to offer this case to the members of our profession as one of a novel nature, since doubtless there are many who could relate several similar instances. Such are, however, happily for the owners of horses, not of frequent occurrence. It has fallen to my lot to have been called to a pretty considerable number of cases of fractured bones during my short life, and it may not be out of place if I relate one which occurred during my residence at Winchester. The principal object I have in view in recording these cases is more for the purpose of showing what some of us poor veterinarians in country towns are liable to, so that all may be on their guard, should they at any time be situated as I have been, without a friendly member of the profession near to consult in time of need. To proceed: I was called hurriedly to give an opinion upon a race-horse, the history of which was as follows: Frank Buckle was riding the horse in question his trial race, prior to the St. Albans' races. When the animal had gone about half the distance, the rider found something give way; he prepared to fall, and pulled up the horse as soon as he could, which was not for a quarter of a mile. The horse was now seen to be lame in the near hind leg, but neither the trainer nor himself could discover the cause. He was therefore led to his stable, a distance of two miles, and a messenger was despatched to the owner, whose residence

was twenty miles from the training stables. This gentleman directed his veterinary surgeon to go down at once to see the horse. He rode there and examined it carefully, but could give no decided opinion. He consequently advised that another veterinary surgeon should be called in, and my name was mentioned. I was requested to attend. I accordingly did so, and in the presence of the veterinary surgeon, trainer jockey, *cum multis aliis*, proceeded to examine the suffering animal, who was lying stretched out in the loose box. The fact of the horse having been both bled and purged, made it difficult to form any opinion at all. I confess I never was so much puzzled in my life. I determined, however, minutely to examine every part of the frame. I commenced handling the joints, when, on taking hold of the uppermost hind leg, which was the near one, the horse winced. I gave the limb a pull, and discovered the large metatarsal bone to be transversely fractured. Upon my stating this, the trainer exclaimed, "You don't say so!" I appealed to the veterinary surgeon, who said he was perfectly satisfied with the correctness of my opinion. Thus, it will be seen how difficult it is to pronounce *at once* upon cases of this kind. I happened to be the fortunate individual who gave an extraordinary pull, *in my moment of veration*, and hence the discovery of the fracture. There are cases where we cannot handle a limb as we would wish. The one I have so imperfectly described in the former part of this note was of that class. The probability is, if I had employed *considerable force every day*, I should have found out sooner than the fifth day that a fracture existed; but then I should perhaps have been found fault with for meddling, and it is just possible that some good-natured persons might have declared that I—as watchmakers are stated to do sometimes with watch-springs—broke the bone myself.

I think we are bound to record those cases which from time to time come before us, so as to give information to those of our brethren whose practice does not afford them the means of speaking to facts; and doubtless there are many so situated in our profession. While it is by the accumulation of facts such as these we are enabled to clear up many difficult points that we may meet with.

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By WALKER WATSON, M.R.C.V.S., Rugby.

HAVING endeavoured to show that botany is of practical utility to the veterinary surgeon, I will now offer a few remarks upon its importance as a science alone. At the present day the science of botany is taught in all our great agricultural and many other public and private schools; and the introduction of the natural sciences, as a part of education, is receiving that attention which has been far too long neglected, and which, from their importance and usefulness, will soon become more generally carried out. This fact ought to have its influence upon us as a body, and rouse us up to consider our own position as professional and scientific men. It is true our profession has made great and rapid progress during the last few years, under the very able guidance of those who hold the helm; but there still remains much to be done, so as to enable us to keep pace with the ever-increasing advancements of the day. The introduction, then, of botany, as a branch of the education of the veterinary surgeon, is greatly required. Sooner or later it must be brought about, and the day cannot be far distant; therefore let it be introduced in our own *alma mater*.

The idea that it will make the veterinary surgeon too scientific, and above the practical part of his profession, an idea which some few persons may be inclined to entertain, should be at once discarded. Such views have been clogging our wheels of progress too long. Practical knowledge I admit to be essentially necessary; but practical knowledge is not all. We must be men of science as well. Almost every village farrier and cow-leech may be possessed of a certain amount of practical knowledge, but it is only in proportion as we exhibit our knowledge as scientific men, that we stand out in bold relief as members of a great and worthy profession. Let us then, as far as we can, make ourselves acquainted with the science of botany. There may be difficulties to contend with, but what is there worthy of attainment without them? Yet there are none but what a little persevering industry and zealous application will soon overcome. Let the leisure hours (and who has not some?) be devoted to its study, and rest assured the knowledge acquired will ere long repay the efforts made. It will open to us a wide and hitherto unknown field of interesting research, and enable us to look into the beauty and perfection of nature as

exhibited in the vegetable world, and see "her simple, grand, yet unobtrusive excellence." Its pursuits will be found an agreeable relaxation from our ordinary professional labours, and tend to promote health both of body and mind. We shall have here no gloomy dissecting room, noxious with the effluvia of decomposing animal matter; no reeking muscle; no torturing vivisections, or unnecessary destruction of animal life, to contend with; but the fresh pure air of heaven will surround us, and the green carpet of nature will be spread out for our investigations. Our researches, also, can be carried on at all seasons. The awaking beauties of spring, the splendours of summer, the falling leaf of autumn, and the sleep of winter, will each furnish a succession of changes for our study and inquiries; and as we continue to acquire a knowledge of the science, we cannot fail to become acquainted with the great perfection exhibited by nature in some of her simplest forms. Every blade of grass, every weed we tread beneath our feet, is endowed with a wondrous organization and principle of life, and fulfils its minor yet important part in the economy of nature, as assigned to it by its great and all-wise Author. Thus, whether we look into the animal, the vegetable, or the mineral kingdom, and investigate the gradations and changes which are constantly going on in each, we shall find them all but so many links in that mighty chain of being, which had its commencement at the morning dawn of creation, and will continue in unbroken perfection to its close. A science, then, which teaches these things cannot be unprofitable or unworthy of our pursuit.

It will awaken a spirit of deeper research, of more minute investigation; it will enrich the understanding, elevate the mind, and purify the taste; it will tend to make us respected as a body, and to be sought after by all classes of society, as ornaments of the great and noble profession to which we belong.

In my foregoing remarks I have attempted to point out some of the important uses of botany to the veterinary surgeon, both in a practical and scientific view; I will now bring the subject more clearly to bear, by offering some observations upon those indigenous plants which are more commonly brought under the notice of the veterinary surgeon. In doing this, my remarks to those who may be acquainted with the science may be considered somewhat simple, but I shall endeavour throughout to make them as plain and devoid of technicalities as possible, my object being to render the subject clear, interesting, and instructive, to a class of

readers, many of whom have had no opportunity of obtaining a knowledge of the science except from their own researches. I shall, therefore, for the sake of convenience, consider these plants under three heads, viz. :

1. *Plants constituting the food of our domesticated animals.*
2. *Plants employed as medicinal agents.*
3. *Poisonous plants.*

In doing this I shall confine myself to those in common use, giving the chief botanical characteristics which distinguish them, adding any other remarks respecting their properties, &c., that I may deem necessary. The first-named I shall obtain from our best authors on the subject. But before doing so I have thought it might not be out of place, and would make the subject more interesting, were I to give a slight outline of the *systems* by which botanists have arranged plants; and having done this, to describe the names given to the different parts of a flower. In this latter I shall be much assisted by a few sketches which the Editors have kindly had engraved for me.

There are at the present time known to botanists upwards of 80,000 flowering plants, besides great numbers which produce no true flowers; it, therefore, becomes obvious, that some definite arrangement must be adopted under which these different varieties might be grouped together for investigation. Efforts to attain this end were made by different botanists, from the time of Theophrastus and Dioscorides down to about the middle of the last century; some adopting the method of classification from the fruit, others from the shape of the corolla, &c., but all were very imperfect, and indeed nothing approaching to a perfect arrangement was arrived at until the great Linnæus brought forward his very comprehensive and beautiful system, called, after his name, the Linnean System.

This system continued to be used by botanists for many years, but at the present day the "Natural System," as first suggested by Jussieu, and improved by succeeding botanists, is the one more frequently followed. I shall, therefore, confine myself to a brief description of these two systems—the Linnean or artificial system, and the natural system, as accepted by Dr. Lindley.

THE ARTIFICIAL SYSTEM.

The object of this system is the arrangement of different plants according to their reproductive organs, without any

reference to the relationship of each plant as regards the properties, &c., except that the species of a genus are always kept together. The *stamens* and *pistil* are the reproductive organs, and upon the number, connexion, and situation of these the system is founded. It consists of 23 classes of plants, which have either stamens or a pistil, and a 24th class, the plants of which, such as the ferns and mosses, have no true flowers. The terms are of Greek derivation, and the words *andria* and *gynia* are used metaphorically for stamen and pistil. The first eleven classes depend upon a definite number of distinct stamens; the 12th and 13th upon the number and situation of the stamens; the 14th and 15th on the length of the stamens; the 16th, 17th, 18th, and 19th, by the connexion of their filaments and anthers; the 20th, on the connexion of the stamen to the style; the 21st, 22d, and 23d, when the stamens and pistil are not united; and the 24th embraces plants without true flowers.

These classes are again subdivided into orders, the characters of which are derived chiefly from the pistil. But for an arrangement of these classes and orders, I must refer the reader to a very clear and perfect synopsis, given in 'Babington's Manual of British Botany.'

(*To be continued.*)

PUNCTURE OF THE COLON BY A PIN CAUSING THE DEATH OF A HORSE.

By G. FLEMING, V.S., Military Train.

ON the evening of the 27th Jan. my farrier-major reported one of the troop horses as having been attacked by colic during my absence from camp, a few minutes previously, but that having given him the usual medicines for that affection he was now well.

Happening to go round the stables during the evening stable-hour, I saw the horse. He was a fine healthy animal, in tolerably good condition, and nothing appeared to be the matter with him then, as he was feeding heartily; and when the men left the stables for the night he was standing still and quiet, eating his hay.

About half-past four the next morning, I was hastily summoned to see him again, as he had been found by the stable picket, lying behind the stable door.

On reaching the stable I found him in an extreme state of pain, he having broken loose and rolled all round the stable, smashing the boards and posts in his agony.

The symptoms then were those of acute enteritis, and did not offer any remarkable feature as regards posture, &c. The pulse numbered, as nearly as I could manage to count the beats, about 85, and was hard and bounding.

Assistance was quickly procured, and the animal was immediately removed to a loose box. On examining the conjunctival and nasal mucous membranes, I found them excessively congested, and the mouth hot and dry. At this time his struggles were so furious that no one could go near him; but after a short time he became exhausted, and stood up; but a wonderful change had taken place in him in less than half an hour. The pulse, then so strong and vibrating, was now running down rapidly; the mucous membrane of the gums, eyes, and nostrils was perfectly blanched and colourless; the pupils widely dilated; the breathing short and very quick, with sighing; the surface of the body, ears, and limbs was as cold as ice. I had no difficulty in diagnosing a rupture of the intestines, and considering all treatment to be of no avail, I waited with the poor animal until a few minutes before his death, which took place about half-past seven a.m.

The autopsy, made about three hours after death, showed an almost circular rupture, rather larger than a five-shilling piece, in the side of the colon, through which had passed fæces and partially-digested food into the cavity of the abdomen. There was also a large quantity of blood in a fluid state, mixed up with other matters. On carefully removing the whole of the viscera, and examining the intestines separately, I observed that the whole extent of the colon was inflamed, but the parts surrounding the perforation exceedingly so. Chancing to wash out the fluid matters from the abdomen, I found a small brass pin, one of the common sort, and, I presume, of the smallest size.

I made every investigation to discover from whence it came, and I am perfectly satisfied now as to its having been swallowed in the horse's food, probably the oats. Taking the history of the case into consideration, I think I am fully justified in coming to the following conclusions with regard to it. The pin had found its way into the intestinal canal in the food. After remaining there for an indefinite period, its point had been driven through the wall of the intestine, and it must have been at this particular time that the animal exhibited symptoms of uneasiness, simulating colic. After the peristaltic motion, and the contents of the canal had pressed

the pin through into the abdominal cavity, relief followed, but only for a short period. Fluids would begin to escape through the small opening, and then solid matters, until it became of the size in which it appeared after the death of the animal. I cannot account for this singular rupture otherwise.

NERVOUS AND MUSCULAR APOPLEXY SUCCESSFULLY TREATED WITH STRYCHNIA.

By W. D. BRAY, V.S., Soutergate.

ON the 16th of March, 1858, I was requested to attend a filly belonging to Mr. W. Gradwell, of Roose.

History.—The filly has been out at grass, and was found in a ditch, every part of the body being covered with water except the feet, head, and neck. Is supposed to have been there one night, and nearly the whole of the following day. She was drawn out, placed in a loose box, and repeatedly drenched with warm ale and ginger: she was also bled. This occurred two days previous to my attendance being requested. On examining her, I found the legs and extremities deathly cold, and perfectly insensible; even the prick from a pin failed to produce pain, although applied to the ears and thigh. She lies covered with straw, perfectly still, except the breathing, which is difficult; the pulse is natural. She has passed no fæces since she has been found. I examined her per rectum; the intestine was very cold, and contained only a small quantity of mucus. I then administered a cathartic, had her well hand-rubbed, warmly clothed, and covered with straw, and ordered a bran mash with a little boiled barley to be given, a part of which she ate.

17th. The bowels have not been acted upon; she eats a little sloppy mash; no change in the symptoms. I raised her and placed her in slings, and bandaged her legs.

18th. The medicine is operating. The symptoms are the same as yesterday. She has not been observed to move a limb; pulse rather weak; refuses her mash, &c.

19th. No visible change, except that she constantly swings her head. She has urinated freely, and takes a small quantity of boiled barley. Ordered Strychnia, gr. ij., cum Pulv. Gent. et Zingib. ʒj. in bol. bis in die.

20th. The extremities and legs are still cold; the appetite very bad; the pulse down to 28; bowels regular. Increased the strychnia to gr. iij., giving it as before.

21st. Appetite somewhat improved. She has eaten a few carrots, also a little boiled corn. I gradually lowered her in the slings till the feet touched the ground, but finding the legs quite useless, I again raised her. Continue the medicine.

22d. No change. The owner wishes her to be destroyed, but at my request he consents to her being further treated. Increased the strychnia to gr. iv. twice a day.

23d. Case apparently hopeless. The animal eats but very little; pulse 28; she has a peculiarly distressed look. No change in the symptoms. Increased the strychnia to gr. v., to be given as before.

24th. The attendant informs me that she has trembled very much at intervals since I left her. The ears and body feel somewhat warm, although they are not of their natural heat; appetite improved; pulse 34; she looks lively. I have now some hopes that she will recover. The fæces are natural, and not indicative of fever. Repeat the medicine.

25th. Patient improved. She neighs when hearing the other horses; [seems uneasy in the slings; heat returning to ears, body, abdomen, and near fore leg. Continue the medicine.

26th. I was unable to visit her, but the attendant informs me that the extremities are becoming warm. She dungs and urinates naturally, and has eaten freely. Sent the medicine as before.

27th. A great change for the better has taken place. The legs and extremities are warm; pulse 38. I again lowered her in the slings. At first she seemed totally incapable of sustaining any weight, but by gradually allowing her to bear the weight of her body, she, during the day, stood unassisted. She was, however, placed in the slings at night. Continue the medicine as before ordered.

28th. Patient is so much improved as to be able to turn in the box. Diminish the strychnia to gr. iij. in a dose.

29th. The filly has been walked out a short distance. The appetite is good; the pulse and secretions are natural.

30th and 31st. Strychnia reduced to gr. ij. twice a day.

April 1st. I did not visit her, but heard that she was progressing favorably. Repeat medicine, and reduce the clothing; also give walking exercise.

2d. My patient apparently recovered. She plays when being led out; the appetite is good; she lies down and rises without any difficulty. Discontinue the strychnia, but give the tonics for a few days longer.

I saw her in the month of June; she was then perfectly recovered, and in as good condition and spirits as the other young horses.

Facts and Observations.

ELECTRO-ANÆSTHESIA.

THE application of the electric current for the production of loss of sensation, during the extraction of teeth, was not long since advocated. It was subsequently applied to render other parts of the body insensible to pain; but in this respect it proved unsuccessful, the powerful agent, electricity, merely *diverting* the nervous energy for a time. Since then Dr. Richardson has carried out a series of experiments on the subject, which promise success. He has designated the force "*voltaic narcotism*;" voltaic electricity being the means by which narcotics are introduced into the parts to be operated on. His plan consists in employing a narcotic solution, composed of equal parts of chloroform and tincture of aconite. A piece of sponge being saturated with this, is applied to the part in conjunction with the positive pole of a galvanic battery, the current being directed by means of a piece of thin copper. Another plate of copper, with a layer of moistened sponge, is connected with the negative pole, and thus the circuit is rendered complete. In twelve minutes the insensibility between the plates was so great, that Dr. Halford amputated the leg of a dog without any expression of pain, and subsequently he divided the tendo Achillis of the other leg without any suffering on the part of the animal. The length of time required to effect insensibility appears at present to militate against its general adoption.

Since writing the above, the following has appeared in the *Lancet* :

"The experiments of Dr. Richardson, as to the possibility of producing anæsthesia by the action of anæsthetic agents locally diffused through the part by the agency of a voltaic current, have been continued during the week at the Grosvenor-place School of Medicine, in the presence of competent observers. The following is a summary of what has been done :

"Eighteen operations have been performed in the last fourteen days—twice on the human subject—with considerable success. The femoral was tied, in a dog, without a wince or expression of pain of any kind. In one dog, the leg was amputated, no pain being manifested, except in dividing the bone. The tendo Achillis has been twice divided, in dogs, without pain. The eye of a rabbit has been made insensible,

so that the cornea could be punctured without pain. The eye of a dog has been narcotized, so that the recti muscles could be divided painlessly. Five other experiments (minor), on ears of rabbits or dogs, were all successful. Two experiments, one of tying the femoral, and another of amputation of the leg, both in dogs, were good, but were not entirely without pain. In one of these cases (the amputation) the poles were removed too soon; in the second, the battery got out of gear.

“The drawback at present is the time required. At this moment an hour is needed to cause deep anæsthesia. This difficulty may very likely be removed by increasing the chemical force of the electric current, and by finding a better solution than the one which has been used—namely, chloroform and aconite. These are matters of detail; the principle is established, and it is one of high importance and of great promise.”

FAT AN ANTIDOTE TO POISONING BY STRYCHNIA.

PINDELL states that half a grain of strychnia is sufficient to kill a dog, but three grains, when mixed with fat, will have no effect. Twenty experiments were performed by him. In eleven strychnia was given alone, and death resulted in every case. In the remaining nine the agent was mixed with fat, and it proved innocuous.

By the above we are reminded that in copper smelting works, where the workmen are exposed to the influence of arsenical vapours, a common expedient adopted by them, so as to guard against the injurious effects thereof, is to eat large quantities of fat bacon.

APPLICATION FOR ALLAYING THE IRRITATION IN CHRONIC ECZEMA AND IMPETIGO.

COMPOUNDS of tar have long been held in high estimation for these skin affections. In the French hospitals they are now successfully employing the following:

Purified tar, two or more parts.

Glycerine, thirty parts, adding to them, while hot, starch, fifteen parts, and mixing them intimately together.

This is stated to assuage the itching when all other means have failed, and to be an effectual astringent and resolvent. Moreover it is easily removed by water.

THE FORMATION OF FIBRIN.

THE formation of fibrin and its transformation goes on in the human body, M. Séquard tells us, not improbably to the extent of many pounds per diem. The researches of Schmidt and Bidder have shown that, judging from the amount of secretions, organic transformations must be very great. The dog, for instance, secretes in twenty-four hours a quantity of gastric juice equal in weight to one tenth of the animal itself. Again, twenty grammes of bile are produced every day in a dog for every kilogramme he weighs. These secretions prove that great changes are continually going on in the blood. Now it seems that true fibrin, such as is coagulable spontaneously in the air, disappears from the blood which returns from the liver and the kidneys; and if, says M. Séquard, it be true that the liver and kidneys are the organs in which the fibrin is transformed into other principles, we must admit that in man four or five kilogrammes of fibrin undergo daily transformation there. Moreover, as the quantity of this principle in healthy blood does not vary, it follows that in the twenty-four hours four to five kilogrammes of fibrin are produced.

VARIATIONS IN COLOUR OF THE VENOUS BLOOD.

M. CLAUDE BERNARD, in following up his discovery of the variations in colour of the venous blood of glandular organs, has been led to study the respective influence of the cerebro-spinal and sympathetic systems of nerves, and has arrived at some very interesting conclusions, which have just been published in the *Comptes Rendus* of the French Academy of Science. He has chosen for the subject of experiment the sub-maxillary gland of the dog, on account of the intermitting nature of its secretion, which renders the variations in the colour of its venous blood very distinct. The sub-maxillary gland is supplied with nervous influence, from the cerebro-spinal system, by a nerve termed "tympanico-lingual," which is apparently derived from the lingual branch of the fifth pair of nerves, its real origin being the chorda tympani of the seventh pair. From the sympathetic system the gland is supplied by branches derived principally from the principal cervical ganglion. The conclusions M. Bernard has arrived at are the following: 1. Whenever the tym-

panico-lingual nerve acts with energy, the venous blood of the sub-maxillary gland appears red, whereas it becomes black whenever this nervous twig does not act, or its action ceases to preponderate. 2. The venous blood of the sub-maxillary gland is black whenever the sympathetic nerve acts, and it is the darker in colour as this nerve exerts a more energetic action. The mechanical conditions of the capillary circulation of the gland, determined by these two sets of nerves, are exactly inverse. When the tympanico-lingual is excited, the rapidity of the circulation is considerably increased; when the sympathetic acts, the rapidity of the circulation diminishes. In one case it was found that during the repose of the gland, sixty-five seconds were needed to collect five cubic centimetres of blood from the vein of the gland; but when the tympanico-lingual was excited by galvanism it needed only five seconds to procure the same quantity, and if the action of the sympathetic nerve is sufficiently energetic the flow of blood from the vein may be completely stopped, again to appear when the excitement of the sympathetic ceases, and to be afresh accelerated if the tympanico-lingual is again acted upon. The reason for this is, that the tympanico-lingual nerve increases the calibre of the capillary vessels; the sympathetic decreases it. The sympathetic is the constrictor, the tympanico-lingual the dilator, of the blood-vessels of the gland, and thus during the action of the former the contact between the blood and the elements of the gland is prolonged, the chemical phenomena which result from the organic exchange have time to take place, and the venous blood becomes very black; but, on the contrary, during the action of the tympanico-lingual the course of the blood through the gland is very rapid, the modifications of venosity are differently accomplished, and the blood flows from the vein very ruddy, and preserving its arterial appearance. Owing to the influence of these two sets of nerves, the sub-maxillary gland enjoys in reality an individual circulation, which in its variations is independent of the general circulation; and this is probably true with reference to all the organs of the economy. The nervous system which animates each capillary system, each organic tissue, regulates the course of the blood with reference to the peculiar chemical or functional state of the organ. M. Bernard promises a further communication on the actual chemical modification of the blood, produced by the above physiological conditions.—*Medical Times and Gazette.*

WHY SOME ANIMALS ARE ENABLED TO SEE IN COMPARATIVE DARKNESS.

It has been proved that there exist rays of light of far higher refrangibility than those seen in the ordinary Newtonian spectrum. They are called by Chevreul *lavender* and *fluorescent* rays. Mr. Hunt considers it probable that these highly refrangible rays, although under ordinary circumstances invisible to the human eye, may produce the necessary degree of excitement upon which vision depends in the optic nerves of night-roaming animals. The bat, the owl, and the cat, may see in the gloom of the night by the aid of rays which are invisible to, or inactive on, the eyes of man and those animals which require the light of day for perfect vision.

EFFECT OF CARBONIC ACID ON THE SKIN.

CARBONIC acid, M. Boussingault informs us, has a calorific action. During a late vintage at the Liebfrauenberg, he was told that the fermentation of the grapes had caused a very high temperature. Introducing his arm into the atmosphere around the wort, he felt, as he thought, a heat of about forty or forty-five degrees centigrade; but he found, by the thermometer, that the sensation was a pure delusion, the heat not being really more than about twelve degrees above that of the cellar. The sensation, which may become an actual irritation, is due to the action of carbonic acid on the skin. This discovery M. Boussingault made many years since when travelling in New Granada. He found, on descending into a fissure, near an extinct crater, that his face became flushed, and he felt a painful feeling of heat; but, to his great surprise, the temperature of the fissure was actually three degrees lower than that of the atmosphere outside it. The air of the excavation was proved, by analysis, to consist of 95 per cent. of carbonic acid.—*Medical News*.

Extracts from British and Foreign Journals.

INAUGURATION OF THE VETERINARY COLLEGE, PHILADELPHIA.

From the 'New York Spirit of the Times.'

THE first and principal item of interest, to some of your readers, was the inauguration of the Veterinary College in this city. The ceremony took place on Monday of last week (Jan. 17th). A small and select audience assembled to view the museum, inspect the rooms (corner of Sixth and Master Streets), and to hear an address by one or more of the eloquent patrons of the school. We have described this museum upon your pages, and therefore will add nothing except a tribute of praise to R. Jennings, for the neatness of his osteological arrangement. Adjoining the museum is a small room appropriated as a library. The bare shelves, however, attest the present poverty of the school, and silently appeal to the wealthy for endowments. Over the museum is the lecture-room, large enough to accommodate twenty-five, or more, students.

The expected patrons did not make their appearance, and in their absence, T. J. Corbyn, V. S., made a few remarks, detailing the history of the schools, their struggles, and explained the object of the association. We heartily second Dr. Corbyn in his wishes for success, and hope that the public will be inspired with confidence in the present effort to establish a college. R. Jennings, V. S., followed, appealing to his hearers for encouragement, giving a short statement of the wants under which they suffer at present, and closed his remarks by reading the prospectus of their proposed labours. From this prospectus we gleaned the following items:

The faculty of the institution is composed of W. W. Fraley, Professor of Materia Medica and Therapeutics; T. J. Corbyn, Professor of Pathology and Surgery; A. Tegtmier, Professor of Chemistry and Pharmacy; and R. Jennings, Professor of Anatomy and Physiology.

The college session commences on the first Monday in November, and continues four months.

Fee for the course (we suppose of unlimited instruction requisite to graduation), 100 dollars. The matriculating fee, 5 dollars. Graduation fee, 25 dollars. Subsequent

courses (we presume of lectures only) are for ever free to graduates.

It is proposed to commence a short course of lectures at present, the first to be delivered by Dr. Jennings on Wednesday evening, January 26th; followed by Dr. Corbyn, February 3d; and by Dr. Tegtmier, February 16th. The fee for this partial course was not stated.

We will endeavour to hear these lectures, and will give you our impression of the force of the present faculty.

It is believed that there are students now waiting to avail themselves of the facilities thus afforded to acquire the veterinary art. We have reason to believe this faculty will make capital teachers, and it is not necessary to say that they are veterinary surgeons of the very best stamp and highest qualifications. So far as their professional abilities are concerned, we want no better warrant of success. But the friends of the institution should comprehend that much more depends upon the student numerically. He is the only source of revenue, the exponent of successful management, and, as an alumnus, the sign-board of the only true road to a thorough veterinary education. Every effort should be directed to secure, as soon as possible, classes of students, among whom may be found some one or more whose early acquirements, whose present aid, and whose future promise, may deserve gratuitous education at the hands of the faculty. We feel safe in the generosity and self-sacrificing attributes of such gentlemen as are now working hard and contributing their time and talents to the elevation of their profession, and struggling for the general benefit of mankind.

It will, therefore, require no appeal from the pen of "Little Pills"* to the veterinary surgeons of the country at large for the purpose of arresting their attention to the inauguration of a college in the city of Philadelphia, and to demand their professional countenance, as well as aid, to the enterprise. The veterinary associations elsewhere, and the many agricultural and breeding societies, should come forward and publicly recognise the Veterinary College of Philadelphia. It is for the general welfare of the art, and the personal respectability of its members, that this should be done. Professional courtesy also demands it. Come out, gentlemen, and like one of your colleagues (C. C. Grice, V.S.), nobly and generously welcome the Veterinary College!

Most heartily and sincerely do we congratulate our transatlantic cousins upon the step they have taken, and cordially wish them all success. If there be any point on

* The *Sobriquet* of the writer.

which we can express regret, it is on observing none of those who have graduated as members of the veterinary profession as its officers. It is true that the time was when the mother country had none, and then the Royal Veterinary College of London was established. It is equally true, that its first teachers were selected from the sister profession; but as now this institution has existed for many years, and its graduates are scattered over the known civilised world, it might have been hoped that from among them would have been chosen those who would have constituted the "Faculty" of the Veterinary College of Philadelphia. Nevertheless, as we have before said, the college has our sincere and hearty wishes for its success.

HYDROPHOBIA CAUSED BY THE BITE OF A CAT, AT
DOWLAIS, SOUTH WALES.

WE are indebted to Mr. R. Bowles, M.R.C.V.S., Abergavenny, for the following account of this sad case, extracted by him from one of the provincial journals:

The inhabitants of the neighbourhood of Dowlais have been thrown into a state of great excitement, caused by the death of a man, who for several weeks was supposed to be suffering from hydrophobia, caused by a bite which he had received from a cat some weeks previously. Four other persons were also bitten by the animal, and to whom the prevailing excitement has naturally been a source of great fear. The circumstances are as follow: The deceased, Timothy Davies, aged 63, was a watchman, at the Dowlais New Works. On the 3d of December, he was in the lodge of that place, and while there, a half-grown strange cat came in and lay in the coal-hole. Soon after he went to pick a few bits of coal, and while so doing the cat flew at him, scratched, and bit him on the hand. He immediately put it out of the place, and drove it away. It appears that the cat then went to the backyard of a house in the neighbourhood, and made an attack upon some ducks. It seized one by the head, and scratched out one of its eyes. A Mrs. Margaret Evans, hearing the noise, went to see the cause, and finding the duck thus attacked, caught hold of the cat for the purpose of parting them. It now made an attack upon her, and bit her upon the hand. She took it into the house with the intention of hanging it, but was prevailed by the inmates to let it

go. The animal then found its way into the house of a neighbour, named James, who, attempting to seize it, had his hand bitten. He turned it out, and it then went into another neighbour's house, named Thomas, and upon the daughter attempting to lay hold of it, it also bit her hand, after which the animal was driven out. Little more was thought of the occurrence till the deceased, a few days afterwards, began to complain of thirst, and also inflammation of the throat. He gradually got worse, and mentioning the circumstance of the bite he had received, expressed his fears of that being the cause of his suffering. Mr. White, surgeon, of Dowlais, and Mr. Dyke, surgeon, of Merthyr, attended him, but still he got worse; and during his illness several times complained of feeling as though his senses were going. During the last few days he appeared greatly depressed, and eventually died in a fit on Sunday last. During his illness, a report got current that he was mad, and in consequence thereof, great crowds assembled around his house. In the absence of any decided opinion from the surgeons that the case presented positive symptoms of hydrophobia, there is no doubt that the excitement which prevailed greatly accelerated his death. The circumstance having caused considerable alarm to the other persons who were bitten, we hope, on their account, the excitement of the neighbourhood will soon subside, and with it their dangers and imaginary fears.

[From the report of the inquest on the body, which took place shortly after death, we have thought it necessary to extract only the evidence of the medical attendant.]

Mr. J. L. White, surgeon, said he was first called to see the deceased on Friday morning, the 6th inst. He then found him standing on the step outside the house, to all appearances in good health. The deceased told him that there was nothing the matter with him, excepting that he could not drink anything. He procured a glass of water and offered it to him to drink. The instant that he tried to bring it to his mouth he became so agitated that he (the witness) took it from him, and desisted from further offering it to him. It immediately occurred to him that these were symptoms of hydrophobia, and he inquired of him if he had lately received any wound, to which he replied that he had not. He (the witness) then called the wife aside, and asked her the same question, to which she replied that the deceased had, that day month, been bitten by a cat. He returned to the deceased and again inquired of him, and he then pointed out two small scars on his finger, which he said were caused by the bite of a cat, that had wandered into his lodge, and

bit him whilst he was picking up a few bits of coal. It caused his hand to bleed very much, and he well-washed and poulticed it every night. The witness went on to state that he prescribed for him the usual treatment, but the deceased was totally unable to take any fluid; a small quantity of nourishment was given to him by giving him bread soaked in milk or tea. Excitement or a gust of air brought on a convulsive muscular action of the throat and face, nor could he bear to lie in bed without complaining of a suffocating sensation. During the whole of Saturday night he was getting in and out of bed, frothing at the mouth, and spitting such a quantity of saliva that it formed quite a pool upon the floor. Mr. White went on to say that the symptoms exhibited all the signs of confirmed hydrophobia, and that the deceased died from that cause. He had ascertained that the cat was killed by some men in the Dowlais Yard, but was informed that a cat and dog, belonging to the widow, had both licked the blood and saliva from the deceased.

P. C. Hodgson then received strict orders to see that the animals were destroyed.

The jury after a short consultation returned a verdict "That the deceased died from hydrophobia, caused by the bite of a cat."

The other patients are under medical treatment, one of them, by the advice of Sir Benjamin Brodie, having had the wound received from the cat completely cut out.

NEW PHARMACEUTICAL PREPARATIONS.

It is a fact well known to those engaged in the practice of medicine, that many of our most active drugs, as well as their preparations, produce when administered very variable results; the same drug, or its preparation, failing to exercise any influence on a patient, and at other times developing even distressing symptoms. Without passing a general condemnation on drugs of the best quality, and the pharmacopœial preparations manufactured from them, we believe that the discordant results in question arise from the variable quantities of the active principles necessarily present in such drugs and their preparations. For example, we are informed, on a reliable authority, that both colchicum seeds and cormus contain their active principle in such diverse proportion, that it is frequently necessary to administer double doses of one

sample to produce the therapeutic effect of another. Obviously, this identical variation of strength must ensue with the pharmacopœial preparations of colchicum, whatever the care or skill of the pharmacist. To remedy these evils, Mr. Bastick has pursued a system very different from that generally laid down in our pharmacopœias in the manufacture of most of its preparations. To illustrate his plan by an example, we will take the tincture of hyoscyamus. Now it is admitted, on all hands, that the efficacy of hyoscyamus depends on the presence of an alkaloid, hyoscyamine, in the plant. As the leaves of this plant contain an ever-variable quantity of hyoscyamine, it is manifestly impossible to prepare tincture of hyoscyamus of uniform strength; but if we first extract the hyoscyamine from the leaves, we can easily make a solution of this alkaloid, of constant strength. This is the outline of Mr. Bastick's method for manufacturing the liquors submitted to our notice. At present, he has only manufactured three of these preparations, namely, *Liquor Hyoscyaminæ*, *Liquor Colchicinæ*, and *Liquor Smilacinæ*; but it is evident that the series is capable of great extension. Mr. Bastick informs us that these liquors correspond in strength with the best samples that can be made of tincture of hyoscyamus, *vinum colchici*, and *ext. sarsæ fluid*.

The idea of employing the active principle of colchicum and hyoscyamus in medicine is not new; for Liebig and the late Dr. Gregory threw out the suggestion some years ago to the profession; but the credit of bringing this idea into a practical shape is certainly due to Mr. Bastick. Moreover, we understand that, by improvements devised by him for eliminating the alkaloids, he is enabled to obtain these costly medicines at such a price that expense will prove no barrier to their general use in those cases where such considerations must be taken into account.

We may add that Mr. Bastick's new liquors are quite different from any preparations that have heretofore come under our observation, and are certainly very elegant, being almost entirely free from taste and odour; and those who have tried them pronounce them to be the most reliable remedial agents with which pharmaceutical science has furnished us for combating disease.—*The Lancet*.

EXPERIMENTS PROVING THAT SUGAR IS NOT FORMED IN THE LIVER OF ANIMALS AFTER THEIR DEATH.

By M. L. FIGUIER.

M. CL. BERNARD asserts that the liver has the property of secreting sugar after the death of the animal. To establish this, he takes the liver of a dog, immediately after killing it, fixes the trunk of the vena porta on a gutta-percha tube, and adjusts the other extremity of this tube to a tap of water; he then subjects it for forty minutes to the action of the current of water. He asserts that the liver, thus freed from the glucose which it contained, and then left alone, becomes charged with a considerable quantity of sugar, by virtue of what may be termed a *posthumous secretion*.

This experiment is not decisive, inasmuch as simple washing by a current of water traversing the liver for forty minutes is a very insufficient means of freeing the liver from the glucose which it contains. I have ascertained by many experiments described in my memoirs, that very peculiar precautions are necessary to remove, by the action of water, all the sugar imprisoned in the hepatic cells.

But when this washing is properly and strictly performed, we find that the tissue of the liver, when it has been thoroughly freed from all its soluble products, has not, in any way, the property of forming sugar after death. The following is the process which I followed, to render this fact quite evident.

I took a sheep's liver, shortly after the death of the animal, and I minced it carefully. The tissue thus divided was passed through a fine hair sieve. What passed through the sieve was a true pulp, in which the hepatic tissue was in a great state of division. I washed this pulp in cold water, by decantation, a great many times. After this treatment there remained an almost colourless mass, containing no glucose. It was then left to itself for twenty-four hours, to ascertain whether any sugar would be formed. Now, the water in which this fibrous mass was boiled, after this time, did not contain the least trace of glucose. Thus, the substance of the liver, when well freed from sugar by a rigorous washing, does not become charged with a fresh quantity of sugar after a certain time.

But to decide positively whether the liver secretes sugar after the death of the animal, it was necessary to determine by chemical analysis the quantity of sugar existing in a washed liver, and, after twenty-four hours, to repeat this esti-

mation, so as to ascertain whether, during this interval, the quantity of sugar had augmented. This comparative determination was made in the following manner :

A sheep's liver, taken shortly after the death of the animal, was subjected for *an hour and a half* to the action of a current of water entering by the vena porta and issuing from the inferior vena cava.

After this washing, the liver, which weighed 900 grammes, was divided into two portions, of the same weight each, about 450 grammes.

One of these halves was carefully minced and subjected to decoction in boiling water ; the liquid produced by this decoction was slightly concentrated, precipitated with sub-acetate of lead, and the excess of the lead salt removed by carbonate of soda. The filtered liquor was heated by the cupreo-potassic reagent which, under the influence of ebullition, gave a voluminous reddish-yellow precipitate of hydrated sub-oxide of copper.

This precipitate of suboxide of copper, being collected on a filter, washed and calcined for a long time in a platinum crucible, in contact with the air, to transform it into binoxide of copper, left a residue of this oxide weighing 0.123 gr.

After twenty-four hours, the second half of this liver, which had been left alone, was subjected to the same operation as the first. It was treated with water, precipitated with sub-acetate of lead, then with carbonate of soda, then put in contact, when boiling, with the cupreo-potassic reagent. The reddish yellow precipitate of suboxide of copper, collected on a filter, and calcined, in contact with the air, to transform it into black binoxide, left a residue of this oxide weighing 0.102 gr.

The result of this experiment is, that notwithstanding washing with a current of water for *an hour and a half*, the liver contained a considerable quantity of glucose ; and, moreover, that *this quantity had not increased in this organ when left alone for twenty-four hours*.

I attained the same result in two other experiments in which I determined the weight of the soluble matters existing in each half of the same liver, before and after the lapse of twenty-four hours. This quantity, instead of augmenting, had undergone a slight diminution.

I have said above that the cause of the error which supposes that sugar is formed in the liver after death, is the insufficiency of the means employed to wash the organ. A current of water taken for forty minutes merely through the

ramifications of the vena porta, is not sufficient to free the liver from all its soluble matters, especially when operating on a liver which is much charged with sugar, as that of one of the carnivora must always be. I thought that by operating on a liver less charged with sugar, and prolonging the time of the washing, it might be completely freed from all saccharine matter, and that we could then, without altering or dividing the organ—in a word, without touching its anatomical integrity—ascertain whether sugar formed again spontaneously in its well-washed tissue. I have ascertained that the horse is one of the animals whose liver contains the least sugar. I have profited by this condition to make a final experiment, which has confirmed these.

At the Veterinary School at Alfort I obtained the liver of a horse which had just been killed, and I submitted it for two hours and a half to a powerful current of water. Before this operation, I had ascertained that this liver contained sugar. After this washing, the liver was quite free from glucose; for a piece, weighing 250 grammes, yielded not a trace to boiling water.

Having been left untouched for twenty-four hours, this liver gave no sign of containing a trace of sugar, when tested by reagents.

This experiment was repeated, in exactly the same manner, on the livers of two other horses, and gave precisely similar results: the existence of sugar in the liver, examined immediately after the death of the animal; an absence of sugar, after being washed for two hours and a half in a current of water; and a complete absence of sugar, twenty hours after washing.

In a fresh memoir on the glucogenic power of the liver, I shall very shortly have the honour of communicating to the academy the result of some experiments on the glucogenic matter which exists in the liver, according to M. Cl. Bernard; and which, according to my views, is nothing but the product of the decomposition, by potassa, of *albuminose*—an organic product, the existence of which, in the liver, I have shown, and which was studied and described in a former memoir. I shall prove that this *glucogenic matter* is formed with most of the albuminoid substances, and may be obtained by operating with the albumen of eggs precipitated by alcohol, redissolved in water, and treated with boiling caustic potassa. I shall likewise endeavour to show the chemical difference existing between the sugar contained in the liver and that found in the vena porta, and in the general circulation of animals fed on an exclusively meat diet.—*Comptes Rendus*, No. 23, June 8th, 1857.

THE SORGHO, OR CHINESE SUGAR-CANE.

EVERY addition to the number of cultivated plants, whether directly applicable to the support of man as food in themselves, or indirectly as contributing to the rearing and fattening of animals for the slaughter-house, must be reckoned as so much gain to our common humanity; valuable, of course, according to the proportion between the expense of their cultivation and the amount of production, as compared also with those plants already in use amongst us. Since the general introduction of root and green crops in the cultivation of the country, an immense increase of food has been added to our stores of food; and at the same time the condition of the land has been improved, and the produce of the grain crops increased, by the raising of greater quantities and a better quality of manure. The turnip husbandry drove out the system of fallowing; after a time the rutabaga nearly superseded the common white loaf first introduced; and still more recently, the mangel-wurzel has, in a great measure, ridden over both, as yielding a larger and more profitable crop. The sugar or Silesian beet-root is still upon its trial in this country, as against the common mangel, although on the Continent it is, for special reasons, largely cultivated. When its saccharine properties are as well understood here, it will probably be more generally patronised by the graziers.

Another plant—for which Europe is indebted to China—has recently been introduced into France, where it is likely to be extensively cultivated. We refer to the sorgho, or Chinese sugar-cane, of which a specimen has been forwarded to us by our agricultural correspondent now travelling through France. As in his letter on the subject, published in a recent number of our Journal, he recommends this plant to the attention of the British farmer, we have thought it well to look into the subject; and we shall now proceed to give them the result of our inquiries.

The sorgho appears to be a plant of a nature between the sugar-cane of the West Indies, and the maize or Indian corn. It is like the former in the stem; but, so far as we can ascertain, is nowhere, like it, a perennial plant. It comes to maturity in five months; whilst the cane requires from twelve to eighteen months, according to the irrigation applied to it. With regard to the maize, the sorgho resembles it in its growth, foliage, and constitution, but is totally different in granular produce. In saccharine properties the cane and the

sorgho are nearly of equal value; for whilst the cane yields from 14 to 18 per cent. of saccharine, the sorgho will yield, according to Leplay, 15, and to Dupeyrat 10 per cent. of crystallizable sugar, of precisely the same character as that of the cane, the beet-root, and the maple. Of the proportion contained in maize we have not the means of ascertaining at hand; but if our recollection does not deceive us, it is from 9 to 12 per cent. This, however, is not now the question which lies between the sorgho in the South and the beet-root in the North of France, in which country the two will probably come into vigorous competition in the manufacture of sugar.

The sorgho has hitherto been acclimated in France only as high as the department of the Loire, in the $47\frac{1}{2}^{\circ}$ N. L.; and we have reason to think that it will not pay to cultivate it at a higher latitude, from the noticeable fact that the further north it is grown, the less saccharine it will yield. This accounts for the difference between the two statements given above. M. Dupeyrat speaks of sorgho grown in $47\frac{1}{2}^{\circ}$ N., whilst Leplay refers to the department of Le Gard, in 44° N. L., the difference in the produce of saccharine being *five per cent.* It is the same with the sugar-cane, which cannot be cultivated at all at a higher latitude than about 44° , at which the proportion of saccharine is far less than in the tropical countries. In this respect, both the sorgho and the sugar-cane differ in toto from the beet-root; the quantity of saccharine contained in this latter being greater in proportion as it advances northward. Below 45° it is so small as not to be worth cultivating, whilst in Northern Russia it yields as much as from 13 to 15 per cent. The cultivation of the sorgho in France therefore, for the purpose of making sugar, must necessarily be confined to the South, as that of beet-root is to the North, even if it could be acclimated in the latter, which we much doubt; at any rate, it cannot be profitably grown there for sugar making purposes.

As fodder, however, the sorgho possesses valuable properties, and will doubtless be extensively cultivated in the North of France. Whether for that purpose it could be grown in the United Kingdom remains to be proved; but, at any rate, it is worth trying. In that case, it ought to be sown in the latter end of June or early in July, when there is no danger from frost. It will then be ready to cut in September, and continue until November. If the plants were raised on seed-beds, protected from the frosts at night, it would enable the grower to obtain them at least a

month earlier, and they would then come in at a period when the dry weather would render them particularly useful for cattle.

With respect to the mode of cultivating the sorgho, it is sometimes sown broadcast, and sometimes in drills. Another method is, by throwing the land into small hillocks, by first ploughing it in the Northumberland fashion, and then by cross-ploughing to form it into squares; upon which, put in about four seeds, or plants (if ready), at a distance of about a foot apart. A small quantity of guano, or other artificial manure, put in *near*, but not *with*, the seed, will materially promote its growth. A light sandy soil is the most adapted to the sorgho, but it should be well manured. The *Landes* in the department of the Loire, to which the statement of M. Dupeyrat refers, are a pure moving sand. Ten pounds of seed per acre is about the quantity. It should be previously steeped in water from twenty-four hours to three days; the latter, in order to hasten its growth. The seeds which swim on the top should be thrown away, as only those which sink to the bottom will vegetate.

The quantity of produce from the sorgho is prodigious. Dupeyrat speaks of a return at Beyrie in 1857, in one cutting, of 123,000 kilos. per hectolitre, or about $48\frac{1}{2}$ tons per acre. It grows from nine to twelve feet in height, the specimen we have received being fully the latter. It throws out several stems from the root; and when intended for sugar making the weak shoots are taken off, leaving from three to five only of the stronger ones. But when it is intended for fodder this is unnecessary. In France it is used in the making of wine; and two ares of land, which are 239 square yards, yielded 132 gallons of excellent wine. In distilling, the ripe plant will produce from 7.45 to 9.80 per cent. of alcohol. This refers to the south. It is estimated that 44,000 kilos. of green sorgho are equal to 16,000 kilos. of hay, in nutritive properties. The cattle are remarkably fond of it, and will leave any other food whatever for it.—*Farmer's Magazine*, pp. 160-1.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Journal des Vétérinaires du Midi.

DIFFICULT PARTURITION IN A MARE.

By M. MARTY, Veterinary Surgeon.

THE author of the above case was called upon to attend a mare which could not foal. He found her down, lying on her right side, in great pain, and making strong but ineffectual efforts to get rid of a dead foetus, which was forced nearly one half out of the vulva, while the posterior part of its body was firmly fixed, and could not be expelled from the uterus, notwithstanding the violent straining of the mare. At times she was standing, but more frequently she was down. The respiration was accelerated; the pulse strong and frequent; the mucous membranes highly congested; the extremities cold, and the body covered with cold perspiration. The foal was alive on its exit from the uterus. Under these circumstances, the case was more surprising to the author, he knowing that generally parturition was completed when the fore part of the body had cleared the uterus, and therefore he was at a loss to what cause to attribute this extraordinary obstacle to the complete delivery of the foal; but after a little reflection, he thought it might be a similar case to one previously recorded by M. Caull. With great difficulty the author succeeded in introducing his hand into the vagina, so as to reach the abdomen, where, to his astonishment, he found the hind feet. This at once convinced him that he had to do with a very curious presentation, and one which had not been described. The foetus was in the position of a dog seated on the ground, or lying on his belly. The hind legs were bent at the hocks in such a manner that the feet were brought forward under the belly, and by that means an arch was formed, which rendered the passage of the foetus impossible. To overcome this difficulty three means presented themselves: the first was, to return the legs into the uterus at the same time that traction was effected on the body of the foetus; but the difficulty of introducing the arm far enough to accomplish this was insurmountable. The second was that recommended by M. Rainard in cases of difficult parturition, namely, to return the foetus into the

uterus. This was impracticable on account of the large dimension of the chest of the foal, and which was entirely out of the vulva. The third was that of dissecting off the body, which was done by dividing it at the lumbar region. This being accomplished and the viscera removed, the posterior part was returned into the uterus, after which the hind feet were drawn towards the orifice of the vagina, in order to pass a cord round them, and by this means an assistant was enabled to exert slight traction, while at the same time pressure was made against the rump of the fœtus, and in this way the whole was removed, without the animal evincing the least pain.

The subsequent treatment was long and tedious; the mucous membranes became partially mortified, and had to be excised and cauterized by the actual cautery, and the animal was not in a state to be discharged from the infirmary for some time afterwards.

Annales de Medecine Vétérinaires Bruxelles, January, 1859.

EPIZOOTIC AFFECTION OF THE SKIN—DARTRE
FURFURACÉE—IN THE CANTON DE HUY.

By M. J. MACORPS, Medecin Vétérinaire.

DURING the last quarter of 1858, several cases of *herpes furfuracée*, of an epizootic character, occurred among cattle; particularly in the large distillers' establishments. The malady presented the following symptoms: at the beginning the hair around the eyes came off, and the skin was soon covered with a grayish crust or coating, without any tumefaction, or the animal showing any sign of indisposition. If remedies were not speedily applied, the whole body would become affected with herpes, followed by dulness and loss of appetite. The patient was constantly rubbing himself against the partition or any hard substance within his reach.

This disease has been ascertained to be contagious, not only to animals of the same species, but also to horses and man. In one instance four cows and six horses were affected. The treatment consisted in the exhibition of some purgative medicine and the application of the sulphuret of potassium made into an ointment with oil and lard, and at the end of a week these animals were cured.

The two men who had dressed the horses, and the woman who attended to the cows, were now attacked. The same ointment was applied to them, and a speedy cure effected.

In the beginning of September the author was called to see a young cow, which had been bought about a week before by the owner, and which was affected with herpes. It was very much reduced in condition, was constantly rubbing itself, had lost its appetite, &c.

Although she had been in the stable only a few days, the disease had been communicated to two other cows, and the woman who had milked her had two spots on her forehead, the size of a centime, which had suddenly appeared the same morning, and after a restless night there was clearly developed herpes. The same treatment was adopted as in the former cases, and with the same result.

On the 15th of October a distiller introduced a young bull into his stables which was affected with this disease. Ten days after, it had infected fourteen cows; but as the disease had spread in the regular order from one to the other next it, it was supposed that the herdsman had conveyed it to the different animals by means of the currycomb. The same thing happened at another distillery, where the animals were affected in a similar way, and within the three months more than a hundred animals were attacked with this disease, which, although not mortal, proves highly detrimental to fattening stock.

In all cases two or three dressings with the above-named compound have sufficed to effect a cure.

ON CROTON.

By M. GILLE, Professor of Pharmacy at the Veterinary School, Brussels.

By a ministerial order of the 17th of August, 1857, it is directed that all veterinary surgeons, who have pharmacies, shall keep the seed of the croton tiglium instead of the oil. The advantages resulting from this is, that the seeds are not liable, like the oil, to lose their properties by keeping, and they offer less facility to adulteration. As the use of this drug has been very limited in Belgium, M. Gille enters not upon its properties, uses, &c.

ON CONGESTION.

By M. S. VERHEYEN, Veterinary Inspector to the Army.

THE author informs us that his views of the philosophy of congestion are exclusively founded on observations made on animals, and that he has no desire to generalise it, or to

make it applicable to the human subject. The term congestion he derives from *congero*, to amass, or hyperæmia, ὑπὲρ on, αἷμα (blood)—a superabundance of blood in the capillaries, those organs where the arteries and veins anastomose in their minute branches.

Congestion does not always present the same characters. It is sometimes positive, at others negative. This has lead to the one being called active, or irritative; and the other passive, or atonic.

Active Congestion.—This morbid state is often designated by the name of fluxion, turgescence, &c., from the aphorism of Hippocrates, “ubi stimulus, ibi affluxus.” The epithet active, which has been applied to it, is derived from the idea that it is determined by a motive force, to discover which attention has been directed to the attraction of the blood to the part on which the stimulus has acted in the exaggerated movements of the heart, and also in the peristaltic contraction of the vessels. The importance of hyperæmia, as a morbid element, deserves that these theories be submitted to a critical examination, and physiology will afterwards furnish us with data which will lead to the disentanglement of the proximate causes of congestion. From the materials existing in the blood, the tissues receive the substance of their growth and their renewal, and in consequence of this they have a great attraction for it. The nutritious energies of an organ are in direct proportion to those of its function; it is therefore clear that as they consume more nutritive liquid, they must also receive more; but as this is in direct proportion, it cannot be considered as a cause of hyperæmia. Experience has, however, demonstrated that those organs whose functions are the most active are more exposed to the *affluxus sanguinis*, and that they are *partes minoris resistentiæ*. Physiological congestion takes place periodically in the ovaries, in the uterus, &c. These physiological congestions predispose to pathological congestion; the attraction to which they are attributed is not the correct one, if we separate it from the influence of the vasco-motor nerves. The section of the dorsal nerves of the penis renders the erection of that organ impossible, according to Gunther. The heart impels the blood forward, the other forces are merely accessory to favour its course, or accelerate it locally. Whatever may be the rapidity of the systole, and the energy of the contractions of the heart and the impulsive force, it cannot produce hyperæmia of the capillaries. To maintain the regularity of the circulation, it is necessary that the same quantity of liquid propelled from the ventricles should come back to the auricles. The disgorging of the capillaries, pulmonic and

peripheric, must be in direct proportion to the quantity of blood the ventricles receive; a deficiency in this would cause hyperæmia. The healthy action of the heart, or the attraction, cannot determine active congestion, if the vascular parietes continue to resist the lateral pressure of the blood; the moment they give way all is changed and abnormal. The third cause which has been evoked, is the peristaltic motion of the arteries, grounded on friction. The galvanizing of an artery does not cause a vermicular undulation; it is only a slow, strong, and persisting contraction, which does not extend greatly beyond the part excited. The effect, therefore, cannot be propulsion, for the stricture must necessarily repulse the blood to both sides. This stricture, when once formed, augments the resistance, the result of which is a loss of power. When we intercept the course of the blood in an artery, or examine the vessels of a frog's foot by the aid of the microscope, retrograde action is observed. If we admit the peristaltic action, it would be necessary to attribute these currents to an antiperistaltic motion, and what would then become of the functional regularity of the circulation of the blood?

The arguments on which these doctrines are based are incompatible with the principles of sound physiology. The interpretation of the mechanism of active congestion is intimately bound up with two elements which constitute the structure of the arteries. One of these elements is elasticity, the other contractility. The former is in the great arterial trunks, the latter in the smaller ramifications. The elastic fibres in the coats of the arteries, are only physical in action, similar to that of caoutchouc, and which persists even after death. The arteries dilated by the current of the blood contract to their former calibre, and restore to the blood the impetus which it had lost in distending them. The division of the arterial trunks increases the current of the blood, and the friction against the vascular parietes retards the circulation; thus the undulatory progress of the blood becomes more uniform. In the aorta the pulsation is lost. Incrustation, fatty degeneration, or other structural alteration, will destroy the elasticity of the arterial parietes; they yield no longer to the pressure of the column of the blood; the ramifications through the alteration are either inflexible or soft, giving way without resuming their original form in either case; so that the circulation sustains a local hindrance, the arteries admit less blood, and there is anæmia in those organs, or if more blood is admitted, the anæmia is changed to hyperæmia.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

On the relation of Practical Medicine to Philosophical Method and Popular Opinion; being the Annual Oration delivered before the North London Medical Society, on February 10th, 1858. By J. RUSSELL REYNOLDS, M.D. Lond., &c., &c.

ALTHOUGH not intended for general circulation, we have been favoured with a copy of the above Oration through the kindness of the President of the society; and having read it with much pleasure and profit, we intend to cull therefrom, so that our readers may share in the benefits we have derived.

There is throughout it a nervousness of expression and a force that carry conviction to the mind of the truthfulness of the statements laid down; and at the same time they are communicated with a plainness of language that cannot be well misunderstood, albeit the beauty of eloquence is never lost sight of and rarely slackens.

We shall place the extracts under headings of our own.

ON THE CLASSIFICATION OF THE SCIENCES.

“One of the most difficult problems of philosophy has been the ‘classification’ of the sciences; and although numerous attempts for its solution have been made by profound thinkers of antiquity and of modern times, as yet no thoroughly comprehensive system has been developed. That some of the sciences are closely related to one another we may daily recognise: we can scarcely speak of any phenomenon or process belonging to some without entrenching upon and using the language of others. For example, the processes of life, such as digestion, respiration and the like, require a knowledge of physics and chemistry, not only for their comprehension, but for the expression of their simplest facts; and again, neither physics nor chemistry can be said to be exhausted until we have developed them into animal mechanics and organic chemistry.

“The sciences of physiology and pathology are, to a certain extent, compounded of chemistry, mechanics, and general physics, together with astronomy, so far as it relates to the climatic conditions and variations in animal life; and the history of these sciences presents us with

ample illustration of the Eidolon pointed out by Bacon, that 'some men become attached to particular sciences and contemplations either from supposing themselves the authors and inventors of them, or from having bestowed the greatest pains upon such subjects, and thus become most habituated to them;' and further, that 'if men of this description apply themselves to philosophy and contemplation of a universal nature, they wrest and corrupt them by their preconceived fancies.' "

WHAT IS LIFE?

"At one time, when chemistry received a strong impulse from the influence of Paracelsus, De la Boe Sylvius, and others, every vital process was referred to chemical agency; and thus, in the most unscrupulous and often clumsy manner, fermentation, effervescence, ebullition, and other not very easily imagined changes in the animal fluids, were held to account for all the phenomena of life, both in health and disease. But again, 'mechanics' rose to higher dignity than heretofore, and the curves, angles, and forces were found to be equally satisfactory solutions. With German metaphysics arose new explanations, and every physical fact was found in dependence upon some higher metaphysical fact, of which consciousness was the only witness. Physiology, previously the offshoot of chemistry or mechanics, a subdivision of those larger sciences, had now to take its place as an underling of psychology. Whence to start from, and towards what goal to direct inquiries in the study of physiology, were questions asked often, and thus variously answered. A satisfactory answer could only come from a true classification; such an arrangement of the several elements of study that this one should occupy its proper place.

* * * * *

"The idea of life—that it is merely a modification of general physical forces—is gaining ground, and seriously affecting both our teaching and our practice. It is not a part of the 'positive philosophy,' but it is often the result of the 'positive method,' and of the system of 'classification;' and sometimes of a bungling of this with the idea of the 'correlation' of forces, or with the notion of some central, single force.

"The progress of science tends to show unity of plan amid all the marvellous diversity of nature, to evoke order out of chaos, and harmony from discord; but it should ever be borne in mind, that analogy is not identity, and that harmony is not unison; and that although we may gain glimpses or hints of order, harmony, and unity, a perception of it, in its real nature, is quite as distant as it ever was,—as far from the author of 'Nomos' as from the Grecian Thales.

"But it is not the idea of some central or universal force, the diverse manifestations of which result here in physical, there in chemical, and elsewhere in vital phenomena, which is the most dangerous and delusive notion; although in order to arrive at some good-looking generalisation many tortured facts, magnifying some and diminishing others, dressing up one class, and not only stripping and shaving, but actually flaying others, until they might fairly challenge their most intimate relations to swear to their identity. It is not this generalisation, to arrive at which a kind of scientific steeple-chase has to be ridden, leaping over obstacles, and getting out of the way of great chasms which must inevitably sink the rider and his steed beyond all reach of mortal eyesight. It is not this generalisation, which as a goal may be well

enough, but which as an imaginary hobby-horse is a most unsafe instrument of progression, that we have to fear; for it may be, when duly regarded, a useful stimulus of well-directed work; but it is that other principle and system with which it is so often confounded, and in exclusive satisfaction, with which it so often ends, namely, the entry upon the study of life through the material side alone, and the resting contented with such explanations of vital phenomena and processes as extend only to a definite and accurate statement of the physical and chemical elements which enter into them as component parts."

The author does not intend by these remarks to underrate the importance of accurate physical and chemical examination, for wherever physics and chemistry can explain even a part of a vital process, they should be used for that purpose, and used to the full; and this he illustrates by a reference to

THE FUNCTION OF DIGESTION.

"In regarding the process of digestion, nothing is to be gained by the imagination of some imperial 'Archæus,' seated upon his gastric throne, and wielding the sceptre of royal digestive state; neither is anything gained by supposing a mysterious 'vital entity,' or still more an imaginable 'vital intelligence,' or 'vital force,' degrading itself from its high position to do the low-caste work of a chemical underling; for now we know that the process is one, the immediate changes of which depend simply upon the exercise of ordinary physical and chemical agencies; and, moreover, that the said agencies are (unlike many functionaries) quite equal to their work, and can accomplish it, outside the body, and without any vital drilling, interference, or overlooking. But when we have separated 'pepsine,' and even converted it into an article of diet, thus bringing up a valuable 'contingent' to the support of an exhausted stomach;—when we have determined its atomic weight, and bestowed upon it the due measure of its titles, that real 'reward of merit,' its C. H. N. O.;—when we have analysed its compounds, and become thoroughly acquainted with the forms and limits of action of its most valuable 'adjutant,' the gastric acid;—when we know all the 'peptones,' and can say how pepsine may, with an alkali for its assistance, change its colours, and come down, as by a flank movement upon the unsuspecting amylaceous compounds:—when we have accomplished all this, and much more beside, and have numbered the hours that the 'engagement' between gastric forces and various viands must occupy;—when we have definitely weighed the compounds, enumerated the 'casualties,' and estimated the waste products that rise in air, is there nothing left for us to study; is there nothing that has escaped us; nothing that we have left unweighed; nothing that we have failed in reducing to our formulæ? Is the physiology of digestion summed up in this expression of chemical results? What is there that determines the sense of hunger, of thirst, or of satiety, and how do these influence the chemical transposition? What is the nexus between thought, deep anxiety, or other emotional disturbances, and those sensations; and through them, or not through them, upon this easily described action of the pepsine and its assistant acid? Where do mind and feeling come in contact with these material processes; and how do they

mutually exert their action and reaction? What fits the carnivorous stomach for its food, the herbivorous for its work? How and where is the relation between them and the dental apparatus? Outside, or beyond the most simple chemical results, we are at once arrested by a hundred questions, as yet unsolved, and as far, apparently, from solution as they were when first suggesting themselves to the human mind. Partial answers may be given, *i. e.*, we may advance the problem one degree further from the most easily observed phenomena; but a great gulph comes between us and the final answer; and divide as we will the narrow ground that lies between our starting point and the margin of that gulph; laboriously measure as we like, and accurately name every step of the process from the first rough fact to that brink, reached in the ages long since passed without such fine calculations, we do not by such means fill up the gulph itself, nor have we yet discovered even a plank wherewith to launch out upon the dark sea that comes between the material and the immaterial, the seen and the unseen."

ALSO THE FUNCTION OF RESPIRATION, AND THE NERVOUS SYSTEM.

"We imagine, and our students are often taught to imagine, that the physiology of respiration is exhausted when they have learned how many cubic inches of air constitute the vital capacity of the thorax, how many are exchanged in ordinary breathing, how much per cent. of oxygen is taken in, how much per cent. of carbonic acid is thrown out; what muscles expand the thorax, how the air is squeezed away from the pulmonary vesicles, what nerves act upon the muscles, and so forth. Again, the student often feels satisfied when he can find a parallel between the galvanic battery and the nervous system, and can apply some such mysterious word as 'polarity' to both. In short, there is a species of contentment, the very reverse of that which will lead to further investigation, in knowing accurately some ponderable and measurable facts; a strong temptation to suppose that these constitute the whole instead of only a portion of that which has to be known; and further, a great disposition to think that the whole is already known.

"Now this mode of viewing life and vital phenomena is, I think, the very reverse of an 'advance.' Organic chemistry and animal mechanics are carried forward, but the science of physiology remains behind, and unless there is an advance in physiology and pathology there can be no real advance of practical medicine."

Our author next advances a position, in which, were it not next akin to high treason, we should be inclined to say that we concur with him. Of this we feel assured, that when the time of the student is limited, too much of it is set apart for

THE STUDY OF ANATOMY,

to the exclusion of other divisions of science. Only this will we add—Let the time deemed necessary be ardently and honestly devoted to its pursuit.

"It has always appeared to me that a vast amount of valuable time

is literally wasted upon anatomy, and especially upon that branch of it termed 'descriptive anatomy.' Of course it is needless to say that for the operative surgeon such a knowledge of 'surgical anatomy' as shall render him competent, upon any emergency, to know with what elements he has to deal, is absolutely necessary; and again, for the physician, a knowledge of visceral anatomy is requisite; but what useful end is obtained by a laborious taxing of the memory by all sorts of artificial devices, by V. A. B.'s and B. O. D. F. I.'s, in order to 'get through an examination' in which the candidate is expected to know the distribution and relations of every nerve-filament, and vascular ramuscle, the origin and insertion of every muscle, the course and contingencies of viscera, and parts of viscera which never come under the surgeon's knife, and are always hidden from the physician's ken, I am at a loss to conceive.

"As a mere exercise of memory it is not a particularly good one, for it is of such a nature that four fifths of it are lost as soon as the examination is over; and further, the boy at school should have educated his memory, and the student should not have to waste one half of his ordinary three years' curriculum of proper professional study by a mere gymnastic exercise of mind.

"What is the good of all this? I have often asked, but have never yet received a satisfactory reply. How much of minute descriptive anatomy do we, any of us, remember? How much less do we find of real value to us in our daily work? How should we stand a stiff examination now? We should, many of us, positively flounder in our 'bones!'

"For those who intend to graduate at universities, or to take honours wherever they may be, there can be no doubt that the field of anatomy is an ample and noble one for emulation and distinction; but for the practical use which is made of anatomy in after years, I believe that six months' genuine work would be fully sufficient, and the ordinary student would then have time to ground himself well, instead of 'grinding' himself wretchedly, in physiology, pathology, medicine, and surgery."

It is possible that we may return to this Oration, as we have not exhausted all the subjects it embraces.

Parliamentary Intelligence.

VETERINARY SURGEONS IN THE ARMY.

IN the House of Commons, on Friday, February 25th, in answer to Mr. A. BARING, General PEEL said that a new warrant had been prepared, the effect of which would be to improve the rank, pay, and retiring allowances of veterinary surgeons. That document had to receive the sanction of the Commander-in-Chief with regard to the rank and position of those gentlemen, and of the Treasury with respect to the pay. Until such sanction should be obtained, it would not be desirable to state the nature of the alterations proposed.

THE VETERINARIAN, MARCH 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

COMMUNICATION FROM E. N. GABRIEL, ESQ., REGISTRAR TO THE ROYAL COLLEGE OF VETERINARY SURGEONS.

GENTLEMEN,—You will oblige me by correcting an error in your last number of the *Veterinarian*, relative to Mr. T. Dollar not being a member of the Royal College of Veterinary Surgeons.

Mr. Dollar informs me, that he obtained his diploma at a Special Meeting of the Board of Examiners acting for Scotland, in May, 1855, he with others not being satisfied with the certificate obtained from Mr. Dick's school.

I may be permitted to avail myself of this opportunity to state, that

Mr. Benjamin Fawcett, and
Mr. Lawrence Copeland,

also obtained their diplomas at the same time.

This result was inadvertently omitted to be published in the Register of Veterinary Surgeons.

I am, yours, &c.

E. N. GABRIEL,
Sec. and Registrar.

To the Editors of the 'Veterinarian.'

REMARKS ON SOME OF THE CASES IN THE JOURNAL.

WE feel assured that several cases recorded in the present number of the Journal will be read with interest by the members of the profession.

First. We would particularise Mr. Varnell's case of

tenotomy, as showing the value of veterinary surgery, and the progress it has made.

Secondly. Mr. Dyer's, of comminuted fracture, since it is by no means uncommon that, from an accident occurring, or violence inflicted on a bone, it shall not be completely broken, but only *cracked*, without any displacement taking place, and then some little time afterwards the fracture becomes complete, to the surprise of the inexperienced. . . .

Thirdly. Mr. Fleming's, of ruptured colon, supposed to originate in a puncture caused by a pin. Such is a very unusual occurrence, as in the intestines of horses which are voracious feeders strange matters will be often found after death. We have now lying before us a quantity of these, consisting of pins twisted into all forms, portions of nails, fragments of glass, flint, and granite, with other indigestible substances.

Such most commonly constitute the nuclei of intestinal calculi. Nature, to guard against the injurious effects that may arise from the existence of pointed bodies in the intestines, encoats them with the phosphates, which are so abundant in the food, and which have not undergone digestion from the want of a sufficiency of lactic acid to effect their solution.

But the case we would more especially advert to is Mr. Robinson's, of poisoning pigs with common salt. It may, possibly, operate as a caution, since it is by no means uncommon for the brine-pan to be emptied into the pigs'-wash tub.

Several instances of poisoning by this agent have fallen under our notice. When, some years since, the stomachs, with their contents, of two pigs were sent to us for analysis, we could not find anything absolutely deleterious in them, but we detected the existence of common salt in large quantities; and although at that time we did not feel sufficiently confident to express our full conviction of its being the poisoning agent, we nevertheless stated our suspicions that it was so, which were confirmed by subsequent intercourse and inquiry among the profession, and since then several similar instances have occurred.

Salt has been considered as the natural stimulant to the stomach of most quadrupeds. To the ox-tribe it is sometimes given in doses of a pound or more as a purgative. To the dog it is frequently administered as a vermifuge. The stomach of this animal will reject it at first, but by repetition it is passed onwards, and acts upon the bowels; in accordance with the Liebigian theory—"If the amount of saline substance in solution, introduced into the intestinal tube, be larger than that contained in the blood, it will exercise a purgative action. On the other hand, if it be less, it will become absorbed, enter the circulation, and pass off by the kidneys." The pig, however, seems to be highly susceptible of the influence of salt, nor does that animal manifest the same desire for it that others are known to do.

"Food and physic," said Linnæus, "merge into each other by indefinable gradations." The same may be said of physic and poisons; hence the difficulty of defining what a poison is. Salt, in small quantities, is necessary to the function of digestion; in large quantities it often acts as an irritant poison, as is proved by the highly congested state of the mucous surfaces with which it comes in contact.

In our detection of it we have to bear in mind certain well-known properties that it possesses, otherwise the nitrate of silver test, the usual reagent for the chlorides, will cause it to be confounded with hydrochloric acid, one of the acids met with in the stomach. 1. Common salt crystallizes in a cubicular form. 2. It yields hydrochloric acid by the action of sulphuric acid on it, when aided by heat. 3. Chlorine is evolved on the addition of peroxide of manganese and sulphuric acid to it. "This," says Dr. Taylor, "is so delicate that one twentieth of a grain may be detected, if so be the experiment is performed in a proportionately small tube." 4. It is entirely soluble in water. 5. Rectified spirit takes up a portion in solution, and when this is set on fire it burns with a yellow flame. 6. Its reaction is neutral.

Doubtless much that is taken in is passed out with the egesta, yet generally a sufficient quantity will be found

remaining within the body after death to allow of these investigations being carried out.

Possibly the "wash-tub" may prove a source of poisoning otherwise than from the presence of brine, since when this is not large it would not prove injurious. Commonly, in addition to salt there will be found nitre, which is also used for "pickling;" and often there is to be considered the state of the brine itself. It is highly charged with animal matter, which being in a state of change, will induce the like action in the organism, and give rise to disease, acting on the principle of a ferment. Besides this, the water in which potatoes are boiled, and which is often thrown in with them, or they are mashed up in it, has been long known to contain a deleterious substance; and what wonder, when the potato belongs to the *Solanaceæ*, the same class as that which furnishes the mandrake, the henbanes, the nightshades, and other poisonous plants. Otto discovered *solanina*, a narcotico-acrid principle, in the potato, especially in the bud, and to this has been attributed the ill effects produced by potatoes on cattle, when they have been given in a germinating state.

That the potato itself when boiled should prove not only edible but nutritious, is of course referable to the starch it contains; and that a poisonous principle should be combined with it is no more surprising than that the recent juice of the tubers of the *jatropha manihot*, which when dried and washed furnish tapioca, is found so destructive of life that it is employed by the savages to envenom their spears and darts. Dr. Fermier says that half a teaspoonful of it killed a large dog in five minutes, and a slave condemned to death was destroyed in six minutes by the administration of thirty-five drops. Fortunately it is very volatile, passing off as the roots are dried, and entirely dissipated by heat (*Burnett*).

To this may be added the varieties of the *Brassica*, as cabbages, kales, turnips, &c., the decaying leaves of which, and parings, are given as food to pigs. These when undergoing decomposition yield sulphuretted hydrogen. And how often is it the case, when cleanliness is not strictly enforced,

that fermentation is set up in the “wash,” and it becomes sour by the formation of well-known acids? Portions may also run on into the putrefactive stage, when ammonia will be evolved, and this combining with the sulphuretted hydrogen, will form a dangerous compound—the hydro-sulphate of ammonia. Now, if it be conceded that the animal matters undergoing transformation furnish cyanogen—and blood and offal are often thrown into the food, as the pig will eat almost everything—this, by uniting with hydrogen, will form hydrocyanic acid; which is said to be met with in German sausages that have been long kept, and also in very rotten cheese, although, perhaps, not satisfactorily proved, as it might have been a *product* rather than an *educt*. And it is possible that other cyanides may be generated, equally destructive to life, such as the cyanides of potassium and sodium.

Here is a sufficiently alarming catalogue of what deleterious compounds *may* be formed; but it is well that the vital powers are generally sufficiently strong to resist the influence of them when not in undue quantities; or, it may be, that the secretions they mingle with in the stomach and intestines effect alterations in them and render them innocuous. The virus of glanders has been given to the horse in large quantities, yet it has never been thus productive of the disease; and when carbonic acid and sulphuretted hydrogen are taken into the stomach, they cause very different action on the organism to what they do when inhaled. The same may be said of some other bodies. These decompositions are as varied as they are important, and it is science alone that enables us to explain them, as well as to counteract the injurious effects that are produced by substances inimical to life, commonly called poisons, or when these have been the cause of death, to demonstrate their existence.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, JANUARY 26, 1859.

PRESENT: The President, Messrs. Braby, Barrow, Cherry, Dickens, Jones, Field, Greaves, Jex, Pritchard, Robinson, Silvester, Stockley, Wilkinson, Professors Simonds and Varnell, and the Secretary.

Professor Spooner, the President, in the Chair.

The minutes of the preceding Meeting having been read and signed, the report of the Deputation that waited on Mr. Turner, for the purpose of requesting him to withdraw his resignation from the Board of Examiners, was given by the President, and was, in substance, as follows:—"That the Deputation had an interview with Mr. Turner on the 16th, when, after a long and interesting conversation, in which Mr. Turner stated, that for some time to come he was so fully engaged that he could not attend to the duties of the appointment; and when, in reply, the Deputation assured Mr. Turner that arrangements could be made which would prevent his temporary non-attendance occasioning any inconvenience, that gentleman withdrew his resignation as a member of the Board of Examiners."

It was moved by *Mr. Cherry*, and seconded by *Mr. Ernes*—

"That the report of the Deputation be received and adopted." Carried.

A letter of condolence to Mr. H. King, on the death of his brother, and that gentleman's reply thereto, were read, when—

It was moved by *Mr. Cherry*, and seconded by *Mr. Greaves*—

"That Mr. King's reply be entered on the minutes." Carried.

A letter was read from Mr. Field, tendering his resignation as a Member of the Board of Examiners, when—

It was moved by *Mr. Ernes*, and seconded by *Mr. Silvester*—

"That the same Deputation as waited on Mr. Turner, wait on Mr. Field, with the view of inducing him to withdraw his resignation." Carried.

The Registrar's report was read. It announced that three deaths had been reported during the quarter—George Watts, of Dublin, graduated in 1797; John Williamson, of Dalkeith, graduated 1839; and Charles Henderson, of the Indian Army, on his voyage home on sick leave, graduated 1857.

Five Members have been admitted during the same period :

G. L. Whitmore, of Shepton Mallett.

G. Scully, of London.

W. R. Stanley, of Leamington.

G. Brown, of Leighton Buzzard.

J. K. Quickfall, of Caistor.

It was moved by *Mr. Cherry*, and seconded by *Mr. Ernes* —“That it be received.” Carried.

The Quarterly Balance-sheet was read: it showed a balance in hand of £282 12s. 11d.

It was moved by *Mr. Field*, and seconded by *Mr. Cherry* —“That it be received and adopted.” Carried.

Cheques were ordered for the current expenses of the quarter.

By order of the Council,

E. N. GABRIEL, *Secretary*.

Veterinary Jurisprudence.

MELBOURNE, 13th August, 1858.

GENTLEMEN,—Thinking that the report^t of the case, *Purves v. Bird*, tried some short time since at the Supreme Court, before Chief Justice Stawell, might prove interesting to your readers, I beg herewith to enclose it.

I may mention that Mr. Miscamble and myself were prepared, from the statements made to us by the plaintiff, to have given our opinions in his favour; but the extracts from the ship's log-book, put in as evidence, were such as to leave no doubt in my mind that the symptoms described were those of glanders, although my friend Mr. Miscamble (as you will see by his evidence) viewed them as those of aggravated catarrh.

I am, gentlemen,

Your obedient servant,

ROBERT GIBTON, M.R.C.V.S.

To the Editors of the 'Veterinarian.'

PURVES v. BIRD.

For the plaintiff, Mr. Michie, Mr. Fellows, and Mr. Wood; for the defendant, Mr. Wright and Mr. Higinbotham.

This was an action for not delivering a horse, according to the tenor of a bill of lading.

The plaintiff was Thomas Purves, and the defendant was Hanson Bird, the captain of the ship "Clarissa Bird," in which vessel the horse had been shipped from London for this colony.

Mr. Michie, in opening the plaintiff's case, said that it was not necessary to introduce Mr. Purves to the jury. He was well known as an old settler, and the importer of very valuable stock into the colony. On a recent visit to England he had bought several thoroughbred horses, among others, the sire horse, St. Hubert, the subject of the present action, and shipped them on board the "Clarissa Bird" for this colony. St. Hubert was known as having run second to the Lord of the Isles in the 2000-guinea race, at Newmarket, in 1855. He was a horse of the highest blood, and had he landed safely in the colony would have been worth at least £1000. Mr. Purves shipped six horses, and sent three men to attend them. In the course of the voyage, off the Western Islands, the horse became affected with a running at the nose, incident to cold, strangles, or some other transient disease. A man named Bowser, one of the grooms, alleging that the disease was glanders, asked the captain for a pistol to shoot him. The captain, curiously accommodating, as if it were a donkey that was about to be shot, or a mad dog, handed him the pistol, and the animal was shot, and thrown overboard. This was the occasion of the action. The defence was—first, that the horse was affected with glanders, and that it had become necessary, for the safety of the other animals on board, and even of the crew and passengers, to destroy him; and, secondly, that the defendant had acted with the leave and licence of the plaintiff, a plea which, no doubt, it was intended to support by endeavouring to show that Bowser was the authorised agent of the plaintiff. These were the questions the jury would have to try.

Mr. Michie proceeded to call witnesses.

Mr. Pavey proved the bill of lading and the shipment of the horse by the ship "Clarissa Bird."

Mr. Purves—Was in London in November last. Shipped six horses—among them the horse in question, St. Hubert. There were no horses on board but his. Sent three grooms with them, Bowser, Hopkins, and Parsloe. The horses were all thoroughbred. St. Hubert was the most valuable, both from his pedigree and the position he had held in races. He had run second for the 2000-guineas at Newmarket. He was a sire horse. Was offered £700 for him by Mr. Roe. Witness considered the horse worth £1400. Saw the defendant about the grooms at the time of shipping the horses, and told him that these men would go out and attend the horses.

Cross-examined—St. Hubert ran second when the Lord of the Isles won in 1855. He was six years old when he was shipped. Had Captain Bird arrested in this action, laying the damages at £1000. Thinks St. Hubert was worth more than Boyardo. Paid £100 for him. Has imported several horses. The profit upon them did not come up to the profit estimated on this horse.

Mr. Wright—I believe you have imported some of the best stock in the colony?

Witness—I am much obliged to you for the compliment. (Laughter.) Has imported some very, very good stock. Cannot state what is the average profit he has realised upon imported horses. Realised £1400 upon one horse. Sold Wollerton to the Government the other day for £300. Chabron was a horse of the same class as St. Hubert. All thoroughbred horses are thoroughbred horses. (Laughter.) Chabron met with an accident. Brought the three grooms on an agreement for

three years. Two of the three witnesses he considers have been kidnapped from him. Had written agreements. Bowser left witness's station at the Heads, he believes, to come to him. Witness has not seen him since. When witness came to town he found that Bowser was engaged serving summonses on the other side. That is what he calls kidnapping. (Laughter.) Saw Bowser yesterday. Witness wrote to the station six weeks ago to send Bowser up, and the answer was that he has already left. Does not know that he has left the station in obedience to the subpoena of this Court. The case has been on the list for trial for six weeks. When he saw Bowser yesterday he asked him, "What are you here for, sir?" He said, "I am discharged." When witness received this answer he walked away. Bowser was not the head groom on board. Bowser did not make any remark to witness as to the condition of the horse when he was placed on board. He did not say that St. Hubert had a cold and was unfit to go a sea voyage. Heard the horse cough at Gravesend, and directed that all the horses should be kept covered up. Did not insure these horses except against sea risks. Does not know whether he insured a day before or a day after they were put on board. The insurance had no relation to any conversation such as that alluded to. Hopkins is still with witness. Believes that Parsloe is about in the same boat with Bowser. Witness subpoenaed Parsloe. If Parsloe comes here he will produce him. Paid £100 for St. Hubert, and insured him for about the same sum, with the addition of expenses. The freight of each horse was £50. Boyardo was sold about six weeks ago for £1400.

To the Court—Bought St. Hubert from Mr. Pedley. He was a broken-down horse. He had not covered in England. The horse was well prepared for a voyage. Had him under his own eye at Suffolk-place for a considerable time before he was shipped. He was not refused at stables in London. Does not know and never heard a suspicion that he was refused at any London stable on the ground that he was glandered. Bowser never told him that he had been refused stabling at Shadwell because he had a running in the nose. The ship was lying in Shadwell basin. It is a very difficult place to get stabling. When Bowser came here he told witness that the horse was killed on account of glanders. He said that the horse Chabron opposite him had caught the glanders, but that he cured him by burning his nose. He said that the matter running from St. Hubert's nose had an offensive smell. He did not say that Hopkins had had glanders; he said he had had a sore throat. Admits that glanders is contagious.

William Hopkins, examined by Mr. Michie.

Mr. Michie—Have you the glanders? (Laughter.)

Witness—No, sir.

Mr. Michie—Are you quite well?

Witness—I am, sir, thank you. (Laughter.)

Mr. Michie—Did they burn your nose? (Laughter.)

Witness—No, sir. Arrived in Melbourne in February, by the "Clarissa Bird." He was engaged by Mr. Purves, in London, on the 18th or 19th of November. Was not a groom. Was a sort of labourer. Had been a good deal about horses, but had not seen many complaints. The vessel was in the London Docks when he was engaged. Three days afterwards she was taken down to Shadwell Basin, where she lay on Sunday, Monday, and Tuesday. The horses were shipped on Monday. The night before they were shipped they were placed in livery stables in Bishopsgate Street, Shadwell. Mr. Purves was present at the shipment. None of the three grooms were given any

authority over the other. All had been engaged on the same footing. The "Clarissa Bird" was a vessel of about 2000 tons. They were off Madeira when the horse was shot. Bowser first spoke of shooting him. He asked for pistols from the captain. The captain gave him a revolver. Bowser shot the horse in the forehead. He fired twice.

Cross-examined—None of the three grooms had special charge of any special horse. The horse was shipped on Monday. Dropped down to Gravesend on Wednesday. On Thursday the horse had a running at the nose. It became gradually worse until they got to Madeira. Bowser pronounced it glanders about two days before the horse was shot. The nostrils seemed sore as with inflammation of a cold. The matter running from them was yellow, but not bloody. It stuck to the stall. It became offensive to the smell a few days before the horse was shot. The horse had swellings in his neck for about a week before he was shot. Bowser felt the swellings, witness did not. Bowser knew more about horses than he did.

To the Court—They wiped the horse's nose with a sponge. Did not use the same sponge with the other horses. The horse Chabron on the other side also had a running at the nose, which lasted all the way out. Witness was ill. Told the captain he was not well. He felt rather queer after being so much with the horses, they smelt so strong.

Mr. Michie—Bowser did not suggest to the captain to shoot you. (Laughter.)

To the Court—took no medicine. Got well in a few days after the horse was thrown overboard.

Examination continued—Had very rough weather coming through the Bay of Biscay.

Re-examined—The same sponge was not used for St. Hubert from about a week before he was shot. Up to that time had used the same sponge and bucket for all the horses. They were all clothed alike. There was a cloth over them and a roller. Chabron had the running before St. Hubert. It remained about the same all through the voyage. After St. Hubert was shot had spare clothing for the horses. Washed his clothing. The swelling about St. Hubert's throat was as big as witness's hat, hanging below the throat, and reaching to his ears. Bowser lanced the swelling about a week before he was shot. The discharge was considerable. The sponge was not changed for some days after the lancing. The sponge used to wash the swelling was for some days used with the other horses. The horse had a cough. He had no great difficulty in drinking.

Peter Parsloe, examined by Mr. Wood—Witness in his first occupation was a butcher's boy in London. He was afterwards employed at King's livery stables. After that he drove Lord Blarney.

His Honour—Was Lord Blarney a horse?

Witness—No, your honour, he was a gentleman. (Laughter.)

Mr. Wood—Was he an Englishman?

Witness—No, sir; he was an Irishman. (Laughter.)

Examination continued—After that lived with Charles Peck, at Mallon. Was engaged by Mr. Purves on the 19th of November. Was engaged for three years. Has left him. Went to Mr. Purves's station, and left it.

Mr. Wood—With Mr. Purves's knowledge?

Witness—Mr. Purves knew afterwards, sir. (Laughter.) Remembers St. Hubert. He had a cough. Noticed it a few days before he was shot. He ran slightly from the nose before he was shipped. Cannot say for how many days before he was shipped. Also noticed some swelling about a week before he was shipped, as he was leading him from Euston

Station to Mr. Phillips's stables at Camden Town. The swelling was about the size of a walnut. On board ship his head was very much swollen with knocking about. The swelling of the gland increased very little. Mr. Purves has asked him whether the swelling was as big as his hat; and witness said it was, but he meant the swelling of his head. The whole head was swollen with the knocking about of the ship. The other horses could stand on their feet; he could not. There was a separate sponge for this horse from the beginning. Mr. Bowser, the man who had charge of the horses, was suspicious of this horse from the commencement. They had one large sponge at leaving, which was afterwards cut in two a few days after they sailed. Never saw the horse lanced. Chabron had a cold, and a running at the nose through the whole passage. Saw blood about the horse's head. That was when he was knocked about by the vessel. Witness did not attend much to the horse during the week that he was so very bad. He was employed cooking for the other men. Did not see him shot. Would not go to see it.

To a Juror—The slings had been removed. They chafed the horses.

Cross-examined—Bowser was head groom, and had the direction of the other two. Took notice of the swelling of the glands when he brought the horse to the stables the first day. Cannot say with certainty whether he mentioned it to Mr. Purves. The top door of the stable was left open, as Mr. Purves said he wanted to prepare the horse for shipping. The man whose stables he stood in at Shadwell did not like his appearance. The three grooms took it in turns to attend to the cooking. It was witness's week when the horse was shot. Recognises his signature to the document handed to him. (This was an entry in the log-book, signed by the three grooms, stating the circumstances under which the horse had been shot, and his symptoms.) Thinks it was signed in Hobson's Bay. Witness had 40*l.* a year.

Re-examined—Besides his wages was to have been 5 per cent. on all winnings if Mr. Purves ran his horses. Bowser never left the horses.

To the Court—This entry was signed by him in Hobson's Bay, about two months after the horse was shot. It was given to him to sign by Bowser. It is dated in December. It was February when they were in the Bay. Bowser, Hopkins, and Captain Bird were present. There was another entry signed. Signed one in the Captain's room. Signed the other in the steerage. Cannot say which he signed first.

To Mr. Wright—Does not recollect signing any entry in a book that Bowser called his log-book on the 6th of December, the day the horse was shot.

Mr. Edward Roe, examined by Mr. Fellows—Heard of the horse St. Hubert. Did not exactly make an offer for him. Never saw the horse. He could not possibly have made an offer for the horse, as he was dead at the time. Is an auctioneer. Owns a great number of horses, and is a judge of the value of horses. Cannot speak with certainty of the value of a horse without seeing him. A man may hear of a horse and desire to have him. If he had seen this horse might have wished to buy him.

Mr. Fellows—If a horse came in second for the 2000-guinea race at Newmarket, it would give him a certain value?

Witness—It would, certainly. He would clearly be better than the horse that came in last. (Laughter.)

Mr. Fellows—You can form a closer estimate than that?

Witness—If I liked a horse I would not stop at a few hundreds. The price of a horse depends very much on how you feel yourself, and how your money is. (Laughter.)

Chief Justice—And whether you are after a champagne lunch? (Laughter.)

Mr. Fellows—What did you offer for Bayardo?

Witness—I offered £1400.

Chief Justice—That was after a champagne lunch? (Laughter.)

Witness—I offered more than he was worth.

Elijah Glazebrook—Has been in the colony since last October. Is a trainer and jockey. (The witness gave a long list of the services in which he had learned his skill in England.) Came out in the “Istanbul” with thirteen horses, twelve of them thoroughbred. They all had colds on the voyage.

The evidence of this witness was objected to, as he spoke from the experience of a single voyage only; and, after a protracted effort to get his evidence in, he was at length withdrawn.

William Hoskins—Has done a little in the law once. Served part of his time to an attorney. Has been a comedian since. Has been acquainted with race-horses for more than ten years. Knew St. Hubert. Has seen him run at Newmarket, in the race called the 2000-guinea race. He came in second; he ran a very good second to Lord of the Isles. Kingston came in a good third.

Mr. Michie—What was your opinion of St. Hubert?

Witness—I thought he was the best bred horse in the world. (Laughter.) Honorable gentleman may laugh, but I can prove it by the ‘Turf Book.’ He was by Surplice, out of Farina. He cost two thousand guineas a two-year old.

The *Chief Justice* had to assure the witness that the Court did not take judicial notice of the ‘Turf Book.’ (Laughter.)

Examination continued.—Knew a horse called Bayardo. He started first favourite for the Doncaster St. Leger when it was won by the Knight of St. George. St. Hubert was a much higher-class horse than Bayardo.

Cross-examined—Bayardo is eight years’ old. St. Hubert would be six years old if he were alive.

Mr. Wright—If St. Hubert were so valuable a horse, how came he to be sold for £100?

Witness—If I were permitted to go into detail of matters of fact that I could not state as legal evidence, I could tell you exactly how he came to be sold for £100.

The *Chief Justice* intimated that witness must not state what did not come within the definition of legal evidence.

Witness—St. Hubert, as a sire, was worth 3000 guineas. In England no man could expect to send a mare to him under 25 or 30 guineas.

James Hudson—Saw St. Hubert run at Newmarket. Thinks he would have been worth £600 or £700 if he had arrived here. It is hard to say what his value might be. Two or three parties might desire to own him, and then nothing would stop them. He was as good a horse as Bayardo. He had not performed as well in England.

[It was now past 5 o’clock, and it was proposed to adjourn. The Court left it to the jury to decide according to their convenience. Mr. Wright said the defendant’s case alone would occupy six hours, and if they went on they could not close before 12 o’clock. The jury preferred going on and finishing, though it should take to 12 o’clock.]

John Miscamble—Is a veterinary surgeon. Has practised 14 years. Glanders consists of the discharge of poisonous matter from one or both nostrils of a horse and a swelling under one or both jaws, with ulcers in the lining membrane of the nose. The swelling is in the glands

attached to the lower jaw. The ulcers have a very decided character, and the matter at an advanced stage has a very offensive smell. In a slow chronic case a horse may live for years; in an acute attack he generally dies in six months. A mild form is curable. Has never known an acute attack cured. Strangles consists of swelling extending from the ear to the throat. It is not easily distinguishable from glanders by unskilled persons. There is usually a running from the nostrils.

To his Honor.—A neglected strangles exposed to inclement weather might decidedly run on to glanders.

To a juror.—The discharge is fetid in both cases.

The swellings of glanders never attain the same size as in strangles, nor are the swellings situate at the same place. The swellings in strangles may extend down nearly to the lip—those in glanders are situated in the angle of the jaw. The swelling in glanders could not be properly described to be as big as a hat. The knocking of a horse about on board ship might produce swelling of the head, like strangles. A horse in strangles would get weak, and be much disposed to lie down. With a horse on board ship, carried on deck, and not in the close hold, it would take months for strangles to degenerate to glanders. Would not say that a horse was not glandered because the disease was not communicated to other horses by the use of the same sponge. Doubts if strangles is either contagious or infectious. Thinks that glanders is both.

To a juryman.—The offensiveness of the discharge does not afford a means of discriminating between the two diseases. A horse in strangles on board ship, without a veterinary surgeon, and having his head swollen as big as a hat, would have little chance of surviving. If the swelling were opened it would dissipate naturally, and cure itself. There would be no use in opening glanders. There is no imprisoned matter in glanders. You would only be cutting through the gland.

Witness was cross-examined at great length by Mr. Wright. Mr. Wright read the symptoms described in the document signed on board ship, to which the grooms had affixed their signatures. And witness said he would conclude from these symptoms, if he knew no more, that the horse was suffering from an aggravated catarrh, and that a horse so affected would have little chance of living through the voyage.

Re-examined.—The discharge of matter from the swelling when lanced was inconsistent with the supposition of glanders: there would be no discharge in lancing a swelling of glanders.

This witness was examined and cross-examined at great length as to the precise nature of glanders, and the distinction between it and strangles.

Mr. Robert Gibton, M.R.C.V.S., London, was also examined with great particularity, and at great length.

This closed the plaintiff's case.

Some nonsuit points were raised, and reserved.

The foreman of the jury said that if it were not irregular, the jury would wish to inform the Court that they had made up their minds. It would probably save the time of the Court.

Some parley took place between counsel, the parties not knowing which the jury had concluded to find for. At length it was agreed that defendant should not go into his case, and that counsel on both sides should waive their right of addressing the jury, trusting to the Judge's charge.

His Honor charged briefly, stating to the jury that the issue for them was, was the horse affected with glanders, or any other infectious and

incurable disease. His Honor intimated his own opinion that, if they believed the second groom, and he seemed to know more of the matter than the first, his evidence, taken along with the professional evidence, went to show that the horse had glanders.

The jury found for the defendant.

MISCELLANEA.

THE IMPORTANCE OF TIME.

The *past* and the *future* have a historical and prophetic connection with the *present*, and therefore can never be severed from the regards and considerations of men. But the *present* alone is the available field and workshop of our actual performances. The hour that now is, is the element wherein we are ordained to live, and out of it we have to unfold the possibilities of our destination. It is the point which visibly connects us with the boundless contingences of universal being. We build our fate out of the rough materials which every day hurls confusedly around us. From a rude unshapen mass of capability, it is our appointed task to rear the temple of a manful and worthy life. Time, thoughtfully considered, is as earnest and awful as eternity. It is indeed eternity in the vesture of an hour—a visible revelation of the infinite continuity, disclosed to us under finite limitations; a divergent ray of duration, under an aspect of mortal circumstance. Not lightly should a man esteem this fleeting phenomenon called to-day. Under the lowest consideration, it is the outcome of all preceding generations; and with its chequered sunshine and gloom it is ours even now to work in with faithfulness and courage. Gird well thy heart with integrity and strong endeavour, and put the stamp of an everlasting emphasis upon whatsoever duty thou canst find to do; for every act and effort of a man is charged with an abiding force whose vitality is never quenched, but visibly or imperceptibly circulates for evermore.

OBITUARY.

Died, January last, of cancer of the tongue, Professor Gunther, of the Hanover Veterinary School. He was nearly 70 years of age, and considered one of the highest authorities on veterinary matters in Germany.

We have also to record the death of Mr. W. Hubbick, late of Durham, who graduated at the R.V.C., May 11, 1853, and Mr. G. Dale, late of Camberwell, who graduated at the R.V.C., March 27th, 1839.

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Communications and Cases.

EPILEPSY IN THE HORSE.

By WILLIAM CAMPS, M.D., London.

IF I were asked to describe in detail the peculiar and especial phenomena commonly observed during a paroxysm of epilepsy, or an epileptic fit, as such an attack is usually called, when occurring in the human subject, I am not aware that I could do so more correctly than in thus narrating to you the phenomena that I witnessed one day in the summer in another animal, namely, in the horse; and by doing so, you may judge the present communication not to be unworthy of record in your Journal. I propose to detail this case in the following manner, and will, after having done so, make some remarks upon this disease, and more especially with a view to comparison of the same as it may exist in man and in the horse.

In the afternoon of a summer's day I was crossing Waterloo-bridge, in the direction towards the Strand, and coming in the opposite direction, at an ordinary pace, I observed a Hansom cab, containing a gentleman, on his way, as I had no doubt, to the Waterloo terminus of the South-Eastern Railway. At about the centre of the bridge, and close to where I was walking, the horse — one of ordinary size and make — uttered a piercing shriek, or sudden snorting loud noise, and fell instantly to the ground, as though struck down. The driver was pitched head-foremost off his seat, and over the head of his cab, and narrowly escaped serious hurt; the gentleman, too, was thrown forward, but without damage to his person, for as soon as he could alight from the cab he took up his carpet-bag, and walked away in the direction of the railway station. The

horse now lay upon the ground, to all appearance totally unconscious; violently convulsed in every limb; the eyes staring, as though ready to start out of his head; the mouth foaming with saliva, and the head and neck partaking of the violent convulsions that had seized his whole frame. The animal lay in this condition, as near as I can judge for about ten minutes, after which consciousness slowly returned to him. I did not notice whether the urine or fæces were discharged during the paroxysm, as is frequently the case during an attack of epilepsy in the human subject. I waited until the driver could walk the animal slowly back; I say slowly back, for the horse was evidently exhausted and weakened by the violence of the spasms he had undergone. On questioning the driver, he told me the present was the second or third attack of the kind that his horse had had; and, although not accustomed to veterinary practice, I directed him to tell his master, the horse should be kept quiet for some days, and well purged. This terminates my acquaintance with this particular case. I will now offer some remarks upon this disease, by way of comparison chiefly as it may occur in the horse and in man.

In the first place, as to the exciting cause or causes. It is well known, that amongst the exciting causes of epilepsy in the human subject, mental or moral emotions have long been considered as holding a foremost rank. Without going into detail on this subject, or offering illustrations of this statement, it will suffice to remark, that the experience of all, adequately acquainted with medical literature, or tolerably familiar with medical practice, cannot fail to supply them with numerous instances wherein this class of causes has been in operation as concerned in the production of the disease in question. Over and over again I have myself witnessed cases of epilepsy, either during or after the paroxysm or fit, in which I have had good reason for entertaining the opinion that certain mental or moral emotions had largely, if not entirely, contributed to this result. Now, without denying that, in some instances, fright may so far affect the horse, as to prove an exciting cause of epilepsy in that animal; still, I think, that almost as a general rule, the class of causes now under consideration may be excluded from further notice, as tending towards the production of this disease in the horse.

Assuming this position for the sake of argument, we thus eliminate at once, so far as concerns this animal, most of such cases of epilepsy, as, if speaking in reference to the human subject, would be regarded as cases of epilepsy of

centric origin. Without altogether denying, that in some instances the presence of tumours or morbid growths or excrescences of any kind, or of spiculæ of bone in certain parts of the brain or spinal cord or their membranes, may occasionally operate as causes of epilepsy; yet, I am by no means prepared to admit, that their presence in such places, by irritation of these structures, is so frequent a cause of this disease as is affirmed by some medical authorities. Yet, whatever view of the question, whether affirmative or negative, may be taken, the same reasoning will apply equally to man and the horse, in regard to the disease under consideration. We are told, that in some instances, such foreign bodies have been found in these situations on examination after death; this I do not deny, but at the same time, the evidence, that these had much, if anything to do, in the production of epilepsy, still less, that the disease took its origin from them, is, in my judgment, far from complete, and in some cases that have been recorded, unsatisfactory to the last degree. Again, the circulation of blood in an unhealthy state, in its accustomed channels, through the substance of the delicately constructed brain or spinal cord, appears to me not unlikely to be a frequent cause of this disease in man. The comparatively recent physiological researches of Dr. Brown-Séquard have thrown much light upon the heretofore obscure pathology of epilepsy in the human subject; and I conceive that his arguments, and the conclusions deduced therefrom, are, for the most part, perfectly applicable to an animal so high in the zoological series, as the horse is well known to be. With this observation, however, I must close my remarks on this interesting disease, hoping to develop the subject more fully in your Journal on some future occasion, than my time will now allow me to do.

“USING A GLANDERED HORSE IN A PUBLIC VEHICLE.”

Communication from Assist.-Professor VARNELL.

ROYAL VETERINARY COLLEGE;
February 16, 1859.

GENTLEMEN,—I have much pleasure in placing at your disposal the following letter, relating to the case of glanders commented on in your last number, which has been for-

warded to me by Mr. Mavor, one of the gentlemen who examined the horse at the request of Mr. Dollar.

I am, Gentlemen,

Yours, &c.,

G. W. VARNELL.

To the Editors of the 'Veterinarian.'

77, PARK STREET, GROSVENOR SQUARE, W.;
February 15, 1859.

DEAR MR. VARNELL,—Had I not been made subservient to the ends of a design, certainly not creditable, on the part of Mr. Dollar against yourself, I should still have felt disposed to protest, as I now do most strongly, against his conduct as one professional man towards another. I allude, of course, to his late futile attempt to compromise your scientific reputation, and thereby improve his own.

I feel assured that the exceptions will be few among us who will not reprobate his motives, and feel alarmed by the idea that such proceedings must prejudice our claim to be recognised as gentlemen, and members of an honorable society.

When giving my "reported opinion," I had no idea of the purpose for which, it is now clear, it was chiefly sought; otherwise, my name would never have been lent to so very pitiful an affair.

As Mr. Dollar has taken such pains to show his indifference as to the nature of the means by which he proposes to attain an end, he cannot complain if I bear additional testimony to his indifference by stating that, prior to receiving my certificate, *he requested me to suppress such remarks in it as those which relate to the evidence of a former state of disease.*

Should you feel disposed to hand this note over to your colleagues, the Editors of 'the *Veterinarian*,' for publication, I have no objection to your doing so; in fact, I should rather prefer it, as I do not wish it to be supposed that I was in any way privy to the attack Mr. Dollar evidently contemplated making upon you when he obtained my certificate.

With kind regards, believe me,

Dear Mr. Varnell, yours most sincerely,

WILLIAM MAVOR, V.S.

POISONING OF CALVES BY ARSENIC.

By Messrs. Cox, M.R.C.V.S., Ashbourne.

THE science of chemistry is becoming rapidly diffused, so much so that that which was formerly looked upon as merely a shadow, has now become a reality; and that which was sought after so eagerly by the alchemists has at length developed itself; for such is the application of chemistry to the arts and sciences generally, that with energy and perseverance the philosopher's stone may be found. No man, thinking either of his own benefit or that of others, must now waste his time in mere idle surmises, but be up and doing; for he may rest assured that time will not stay its busy wheel, but continue to hurry on with the same rapidity as ever.

If the science of chemistry be considered a necessary part in every perfect curriculum, how much more ought medical men to have studied that which is more especially connected with their profession, than those to whom the benefit lies simply in its knowledge and not in its application?

Several cases of poisoning of animals have been brought before the public during the last few years, in which the practitioner of veterinary medicine may have been thought in very few instances to have figured favorably, he having been obliged to call in the aid of the analytical chemist, thus showing how important and necessary is the instruction of the veterinary student in the science of chemistry.

It has fallen to our lot to attend a great number of animals that have been poisoned from time to time with different substances.

During the month of June last, as you see by the bill inclosed, Mr. Salt, of the Hulme House, Warslow, Staffordshire, twelve miles from this place, sent for us to see some calves and pigs. On our arrival, we found that four fine yearling calves and two pigs were already dead, and we proceeded at once to make a post-mortem examination of them.

Speaking in general terms, the internal viscera were apparently healthy, but the coats of the stomachs and bowels were much inflamed throughout, there being a much darker hue in some places than in others. These morbid appearances led us to suspect that the animals were poisoned, and that some mineral poison had been the agent. On making inquiry as to the symptoms the animals had manifested, we were told that colicky pains were present in some, but not in others, and that diarrhœa existed in every case.

The animals had only been perceived to be unwell from twelve to twenty-six hours before their death.

On examining the two calves that were still living, we found one griped, the other not. The pulse was quick and feeble; the mucous membranes injected; the eyes sunk in their orbits; the mouth and tongue clammy, and the nose dry. In both, diarrhœa was present, and in one it was attended with tenesmus: these animals also died.

The yearling bull, of which mention is made in the inclosed reward bill, presented all the symptoms described above, and he likewise died.

We brought away some of the viscera and a quantity of the contents of the stomachs and intestines of those animals which we had examined, and the following are the results of our investigation. The stomachs with their contents having been boiled in distilled water, and the fluid filtered, to it was added,—*First*, a solution of nitrate of silver, to which had been added a little ammonia: this threw down a lemon-coloured precipitate—the arsenite of silver. *Second*, a solution of the ammonio-sulphate of copper, prepared in a similar way as the above: this threw down a grass-green precipitate—arsenite of copper.

Thirdly, some of the fluid was put into a fit vessel with some lumps of zinc and dilute sulphuric acid. The disengaged gases being burnt, on holding over the flame a piece of glass a minute quantity of metallic arsenic was deposited upon it. We also used lime water, which precipitated the arsenite of lime; likewise a solution of bichromate of potassa; but these tests are not certain, the former throwing down a precipitate from a solution of oxalic acid, and the latter from a solution of tartarized antimony.

CASE OF RUPTURE OF THE DIAPHRAGM.

By R. HAWES, M.R.C.V.S., London.

THE morbid parts, consisting of the heart and a portion of the diaphragm, which accompany the following description, were taken this afternoon (February 5th, 1859) from the body of an aged roan gelding, of the light cart-horse breed, about 15½ hands high. The only history I can give of the case is, that at a quarter before eight this morning a message reached me, requesting my immediate attendance at the stable. I was, however, unable to start on the instant, being

just about to visit a very urgent case. Having done this, on my return home I thought I would snatch a hasty breakfast previous to my attendance, but before I had seated myself at the table I received another summons, more pressing than before. Attending to this forthwith, I reached the stable about 9 a.m., and found the horse lying dead in his stall. The limbs were rigid, and like the body quite cold; the membranes were blanched, and the abdomen tympanitic. The animal was lying in the centre of the stall, with his head towards the manger, thus elevating the fore parts. The horse did not appear to have suffered any violent paroxysms of pain, the litter being but slightly disturbed; nor could I discover the slightest abrasion of the skin on any part of the body. During the last few days of his existence he had been heard to cough most violently at intervals. Once in my presence so severe was the attack that I feared that bronchitis would set in, unless remedial measures were employed. No treatment, however, was had recourse to for the relief of his cough. A few days also before his sudden death, the animal being lame from a suppurating corn of the near fore-foot, it was thought advisable to convert his stall into a loose box, which was done by placing a bar of wood from the stall-post to the wall at the rear of the building, so that for the few preceding days and nights he had not been tied up in any way. The foot, likewise, was examined and dressed, but in doing this no coercive means nor restraint of any kind were employed, as the animal stood perfectly quiet during the operation.

Being closely pressed for an opinion as to the cause of death, and at what time it had taken place, I gave it as my belief that the death had occurred about ten or twelve hours since, and in all probability from internal hæmorrhage. The carman said that when he left the animal the night before, at about nine o'clock, he seemed to be in his ordinary state of good health.

I was asked the question more than once, by one of the softer sex, whether I did not think it likely that when the shoe was removed and the foot pared a few days before, that the corn had been cut too much, because she had heard of such an event as death occurring in the human subject from the cutting of a corn? I had some difficulty in satisfying my fair questioner that such could not be the case, for I knew, from personal observation, that when this animal's foot was pared, the sensitive parts were not injured, and not the slightest hæmorrhage followed the use of the drawing-knife.

On the arrival of the knacker, at about 2 p.m., I again attended, as I wished to be present at the *post-mortem* examination. The abdomen being laid open, it was found to contain a large quantity of fluid blood, of a dark venous colour, with which were mingled several masses of coagulated blood, the whole amounting to three or four gallons at the least. It was at once apparent that a rupture either of an important blood-vessel or of some of the viscera had taken place. The stomach was found to be filled to repletion with the food, showing that the animal had partaken of his usual provender up to a short time of his death. On passing my hand into the abdomen, near to the diaphragm, I immediately detected an extensive rent of this organ; and on removing the stomach and bowels, it was found that the diaphragm was torn into two parts, the lesion extending diagonally from the spine to the left infero-lateral portion of the viscus. While I was examining the parts which had been removed, a medical gentleman, a relative of the owner, who happened to call just at the time, directed the heart and lungs to be taken out, and, very much to my annoyance, he made incisions into the heart, as you will perceive, as I was thereby prevented forwarding it to you in such a state as I could have wished. He was of opinion, from his examination, that one of the cavæ had ruptured, and that the blood pressing upon the diaphragm had, *subsequently to the death*, produced the rent of this viscus. This statement was not quite satisfactory to me, and I endeavoured to point out to him that the diaphragm being very muscular as well as tendinous where it was torn, that great hæmorrhage would necessarily follow such a lesion. The gentleman failed to point out the particular vessel which had given way, nor could I detect anything of the kind, but he said it must be one of the cavæ, because it was evidently venous blood which was extravasated.

I would beg to ask you, Messrs. Editors, that, supposing the horse to have fallen while asleep with the stomach in such a state of repletion as his was, whether it would not be more likely to cause a rupture of the diaphragm, than a pressure of blood from the giving way of the cava, or the cutting of the corn three or four days before? I venture to solicit your opinion, because both these things are by the different parties regarded as the cause of the rupture of the diaphragm.

[The parts sent by Mr. Hawes consisted of the heart and a portion of the diaphragm.

The former appeared to be quite healthy, but as the roots

of the veins and also a part of both auricles had been cut away, we are unable to give any opinion upon the condition of the vessels.

A rupture existed in the costal portion of the diaphragm, on its left side, which extended from its superior part nearly as far down as the ensiform cartilage. This lesion was recent, and had evidently occurred *prior* to the death of the animal. With reference to the question propounded by Mr. Hawes, we have only to say that his explanation of the rupture is perfectly rational. We never heard of a rent of the diaphragm being produced by the pressure of blood which had been effused into the thorax, besides which, the condition of the edges and adjacent parts of the lesion showed that it had preceded and not followed the death of the animal. It is not necessary for us to make any comment upon the absurd statement of the rupture being caused by the cutting of the corn.]

SUPPOSED CASE OF DISLOCATION OF THE CERVICAL VERTEBRÆ.

By J. ROALFE COX, M.R.C.V.S., London.

As "broken neck," or a case of recovery from this accident, is not of every-day occurrence, I have much pleasure in placing at your disposal the following history of a supposed instance of the kind, which may, perhaps, by occupying a corner of your Journal, tend to the edification of a portion of its readers, and possibly elicit some interesting comments, to the general advantage of the profession.

A dray-horse, after doing his usual day's work, returned home at 5 p.m., and being placed in the stable with the other horses, was fed and properly attended to. He appeared to be in perfect health, and nothing occurred to excite the attention of the persons present until about 7 o'clock, when the man, under whose care he was, took another horse outside the stable for grooming, and while in the act of tying him up for this purpose, he was suddenly called to by the other attendants, and told that his horse was dying. It was reported to me that a struggling noise was suddenly heard, and that the horse was found partially down, having fallen at the extremity of the halter-reins, which being cut, with a view to liberate him, he immediately fell on his side, struggled violently, and broke out in profuse perspiration. On

examination it was found that not only was he unable to rise, but that he could not so much as even elevate his head. This state of things led the persons about the establishment to consider that he must shortly sink, and, as such, they remained watching him until midnight, before seeking veterinary advice. Soon after this time I saw the case, and was informed that the animal had never made a single effort to get up during the five hours which had elapsed; but that frequent convulsions of his limbs had taken place. I was some time in satisfying myself, by a careful examination, of the nature of the case. He was lying flat on his side, the breathing being seemingly diaphragmatic; for, notwithstanding its force from the position he was in, and other causes, no movement of the ribs could be discovered. Slaps and pinches on the limbs or trunk made no impression; nor did the muscles of the tail exert the slightest resistance to attempts to elevate it, nor did they move on pinching it. Nevertheless the lips, nostrils, eyelids, and all the facial parts, possessed their normal sensitiveness.

On examining the neck, which was straightened and the nose protruding—a position which had been noticed as never having been altered—I found it incapable of the slightest movement by the application of manual force, and that each attempt to produce *lateral* motion of the lower cervical vertebræ, by raising the head from the ground, brought on convulsions of the limbs. The pulse was but slightly increased in frequency, affording, consequently, no special assistance in the diagnosis.

It was my opinion that the animal had sustained an injury to the lower cervical vertebræ, but the question arose—how had it occurred? I have frequently seen horses standing back in their stalls at the end of the halter, and falling asleep in that position, wake up just as they are dropping on their knees, being roused by the totter which then occurs; and I conjectured, from the extraordinary suddenness of the attack, that such might have taken place with this horse, and that the check of the halter while he was dropping had occasioned the accident.

I looked upon the case as one of a dislocation, or perhaps fracture of the cervical vertebræ, and as such it was a hopeless affair; but before altogether abandoning my patient, I was anxious to get some clue as to the precise nature of the lesion, and therefore had recourse to further manipulations. For this purpose I directed two or three strong men to make a steady traction at the head in a direct line and along the ground, while I placed my hands

above and below the neck, with a view of endeavouring to detect a crepitus, or any malposition of the cervical bones. In a short time, and after a few varied and uncertain movements had been effected, to my very great surprise we were enabled to force the head downwards towards the breast, having obtained a relaxed condition of the muscles of the neck. Lateral motion, however, was still painful, and brought on convulsions of the limbs as before. Pressure, also, forcibly applied downwards on the lower bones of the neck, appeared to cause great pain. The horse at this stage of my proceedings broke out into a sweat, and most unexpectedly he got up without assistance, in less than ten minutes afterwards, and soon began to feed. He was kept perfectly quiet, and was watched during the night.

On the following day some slight effusion was present at the lower part of the neck; but beyond this and the bruises arising from his being so long down, he gave no evidence of suffering, excepting when *lateral* movements of the neck were made, and when these were attempted even to the slightest degree, they caused him to crouch in such a manner that it was evident he would fall if they were persevered in.

A blister was applied to each side of the neck, with a view to ensure its being kept quiet, and also to obtain an effusion externally to the spinal cord. This constituted the chief treatment adopted. The horse from this time had no untoward symptoms, and presently returned to his work, doing it as well as before the accident.

I am afraid I may have proved rather tedious in my description of this case, but it seemed to me to be necessary to go thus much into detail, for the information of any who might be disposed to take a different view than that of its being a partial dislocation of the neck. I have never seen a case like it; and I feel that I have even now not been able sufficiently to represent its urgency or its precise appearance. Unless there had been an amount of displacement of the bones, so as to cause such positive indications of pressure on the spinal cord, why should the symptoms so speedily have passed away on the application of force? It looks like a reduction of a dislocation accidentally effected by the examination I was instituting.

To remove any impression that the horse might have been only "cast," I would add that *there is not a stall or partition of any kind* in the stable, in which, also, there is room for upwards of thirty horses standing side by side.

COMMENTS ON MR. FLEMING'S CASE OF "PUNCTURE OF THE COLON BY A PIN."

By WALTER LEWIS, M.R.C.V.S., Crewe.

ALLOW me to offer a few remarks upon Mr. Fleming's letter, which appeared in the last number of the *Veterinarian* (*vide* p. 136).

We have therein brought to our notice certain conclusions which that gentleman has deduced from, and which he is of opinion are "*fully justified*" by, the history of his patient's case. I refer to the following,—that the animal had swallowed a pin with his food; that this pin had been subsequently forced through the coats of the colon; that it had left therein an opening; that this opening, at first small, became gradually enlarged by the passage through it, first of fluids, and then of solid matters; and that fatal results hence ensued.

If these inferences be correct, Mr. Fleming's case is certainly one of singular interest, and, as you, Messrs. Editors, justly observe, "of *very* unusual occurrence."

With all due respect, however, to that gentleman, I beg to differ in opinion from him with regard to the justifiableness, *by the history of the case*, of the conclusions he has drawn. Having thus expressed my dissent, and, in so doing, availed myself of a well-known privilege which "doctors" often exercise, especially, it is said, in courts of law, I proceed to give briefly my reasons for it.

1. When I examine the history of the case for the facts on which Mr. Fleming's conclusions are based, I find that they depend entirely upon the mere discovery, during the post-mortem examination, of "a small brass pin, one of the common sort, and of the *smallest* size," respecting the precise location of which, when found, we are even left to conjecture.

2. There is not a single iota of evidence adduced proving, directly or indirectly, that the pin was the actual, probable, or possible cause of death; that it influenced, in the least, the rupture of the colon; or that it was ever present in that organ or even in any other of the body, previous or *subsequent* to the animal's death.

3. The fact of there being, in the cavity of the abdomen, "a *large* quantity of blood in a *fluid* state," tends to show that the rupture took place suddenly; and consequently to disprove the correctness of Mr. Fleming's conclusion, that it was formed gradually in the manner supposed by him.

4. Admitting that the passage of the pin through the parietes of the colon occurred, the opening resulting therefrom would, in all probability, be immediately closed; or, if not, it would not allow—except ulceration had ensued—the passage through it of anything capable of producing injurious or fatal effects. In support of this opinion, I need only adduce the operations of paracentesis abdominis and enterotomy which are successfully performed upon human beings, horses, and cattle; and upon the two latter, even when we employ the trocar used for tapping the rumen, and which is very considerably larger than a pin of the “smallest size.” If we accept Mr. Fleming’s hypothesis, that the puncture of the colon by a tiny pin is, or may be, fatal, how will any of us dare to repeat the operations which I have just named, seeing they are attended (of necessity) with risk increasing in proportion to the size of the instrument employed?

In conclusion, I beg to say, that while I do not assert the *impossibility* of the animal’s death having occurred in the way presumed by Mr. Fleming, I cannot accept his deductions without evidence of a more conclusive and satisfactory character.

A LETTER FROM MR. T. A. DOLLAR.

VETERINARY ESTABLISHMENT,
MARYLEBONE LANE; Feb. 14, 1859.

GENTLEMEN,—I am sorry that Professor Varnell’s reply to my communication, and your leader on the same, necessitates me again troubling you with a few remarks. At the outset I beg leave to deny the existence of any *animus* in the matter towards Professor Varnell; I am only desirous of vindicating my professional opinion in the case, and have only stated the facts connected with it, from the time my attention was first called to it up to the present; as also the opinions of the eminent veterinary surgeons who have examined the horse and confirmed my opinion, that he is not glandered. Professor Varnell asks of what has Mr. Dollar to complain? My answer is most easily given by the following query: Why did the case appear in the columns of the *Veterinarian* (it not being a case of Veterinary Jurisprudence)? and after a lapse of nearly four months. What does the fact of its appearance after such an interval prove to any unbiassed mind?

Professor Varnell refers to a brown horse examined

in September, and a bay horse examined in January, the words brown and bay are in italics, to present the idea that the same horse was not examined at both times. I can satisfy any judge and jury as to the identity of the animal in both instances, and if there really be any doubt in his mind as to the identity of the horse, why does he not take advantage of seeing the horse again, as he has been, and still is open to his inspection when he may think proper?

Professor Varnell's feelings are quite shocked at the thought of the horse being presented for examination in the name of another person; but a little further on he explains why my name was suppressed. He says, with reference to the horse I examined in September, 1858, sent by the police magistrate, I am of opinion that if he is now living he is affected with chronic glanders! * * * * Professor Varnell plainly shows, had he known this to be the horse he had condemned in September he would have given a certificate to substantiate his previous opinion, viz., that the horse was now suffering from chronic glanders. Still further, he states, should the horse sent on the 14th of January be the same as seen by me in September, 1858, and which of course is possible, the opinion then given of his being affected with glanders, and ought at once to be destroyed, is supported by my second examination.

I would ask, can any professional or unprofessional mind perusing Professor Varnell's second certificate, discover any statement or hint of any description which would lead him to suppose, that the horse respecting which this certificate was granted was glandered?

And now for the message repeated two or three times, and said to be sent by the trustworthy and middle-aged man. "Tell your master not to have anything to do with him, for *most likely* the horse is glandered." On Mr. Martin's servant returning from the College with the horse and certificate, I asked him to relate all that was said to him by the professor. I need not trouble you with the conversation that took place, only state that there was not a word said to him respecting glanders, and the man is prepared to take oath, as well as the party who was along with him, that Professor Varnell gave him no message, that most likely the horse is glandered. This statement, however, like most apocryphal matter does not improve the position. He is of opinion that many other horses through him may have contracted this fearful disease, and yet he writes out a certificate which shows that he must have examined the horse most minutely, even to the character of his hoofs; but not a word of glanders, that is a secret that black

and white must not be trusted with; it must be delivered to the safe-keeping of the servant's memory. * * * *
As regards the opinion that the horse had a peculiar cough, strongly indicative of tubercles in the lungs, I will stake my professional reputation, and the price of the horse, if Professor Varnell is willing to do the same, and have the horse slaughtered; and if there are tubercles found in his lungs, I will forfeit both.

The love of fair play, Messrs. Editors, is a national feeling that most Englishmen are proud to boast the possession of. I am afraid that any person reading your leader, 'On Using a Glandered Horse in a Public Vehicle,' will entirely fail to discover the existence of such a virtue. The opinions of all the eminent veterinary surgeons who have examined the horse, and the whole facts of the history of the case, are to go for nothing. Our colleague, Professor Varnell, must be bolstered on his legs again, even in the face of his own testimony in the matter; for he is a professor, and our worthy colleague, and, therefore, infallible. Materials are wanting to effect that object as far as the facts of the case itself are concerned, so negative materials are imported, dressed up to suit the occasion, and thereby, if possible, mislead the public.

An instance is quoted of a horse having periodical attacks of glanders, the leading symptoms of which disease disappeared under simple treatment, and the horse being put to work again, infected numerous other animals, which had to be sent to the knackers to the number of six and eight at a time. Were the Editors not aware, when penning the above, that glanders is an incurable disease, the leading symptoms of which will not disappear under simple treatment, and that the general remarks they have made go a long way to prove that his was not a case of glanders at all, and therefore, the fact of other horses in the stock becoming glandered, is most unjustly ascribed to his presence?

Why was the horse not shown to the veterinary surgeon of police, whose evidence agreed with the original certificate of Mr. Varnell? The horse was submitted for the inspection of the Commissioners of Police, and they caused the veterinary surgeon to the force (Mr. Cherry) to examine him; after his examination, they gave formal permission for the horse to be worked in a public vehicle, which I do not think they would have done had their veterinary surgeon considered he was glandered.

You are pleased to stigmatise me as the man of boasted specifics, alias, a quack. I am prepared to stand by the decision of the public as to whether they can discover

anything like quackery in my statement of the case, and if ever they saw a more glaring specimen than your leader on it. There are other points I should have wished to notice, but will not trespass further on your space.

I am, your obedient servant,

THOMAS AITKEN DOLLAR.

To the Editors of 'The Veterinarian.'

Facts and Observations.

ON THE CHLORIDE OF ZINC AS AN ESCHAROTIC.

By JOHN CAWOOD WORDSWORTH, Esq.

OF all the varied forms of cautery which have been used in medicine, none can be compared for efficiency and dispatch with the hot iron, which has also the additional advantage of inflicting less pain than any other escharotic. But so great a prejudice has existed against it in this country, as well amongst surgeons as patients, that its use has been, in a great measure, limited to comparative surgery. Chloroform has, in a great degree, divested it of its terrors, and both surgeons and patients are great gainers by its adoption. Our continental neighbours use it largely, and with excellent effect. They do not seem to have that antipathy to its employment which is so common in this country, and so take advantage of its action in many cases for which we employ the chemical cauterants—such as the mineral acids, arsenic, and chlorides.

But, in many instances, the application of the “actual cautery” is not so convenient as that of the “potential” ones. Under such circumstances, I believe none can be more effectively and certainly used than the chloride of zinc. It can be managed with the greatest precision, and so regulated as to produce a slough of the thickness of brown paper, or, if desired, of half an inch in depth. Its use is adapted for those cases in which it is desired to arrest a morbid action; as, for instance, the varied forms of phagedæna, or other specific ulcerations, in which a *superficial* slough only is required; or for the enucleation of cancerous or epithelial growths, in which the surface is ulcerated, and from their extent, or some other condition, the knife is inadmissible. Its effect is far more extensive than that of the acids, and,

with a little care, can be easily circumscribed. Several years ago, the writer was induced to combine it with the oxide of zinc as a convenient vehicle for diluting, and applying it to a sore.

Experience has amply proved the advantages which this combination possesses over those commonly recommended, such as flour or plaster-of-Paris ; for while with the oxide it remains as a *powder* easy of application, so as to produce a certain and uniform result, with the latter means it forms a *paste* of some consistence, and becomes much less manageable. The oxide also possesses the peculiar quality of protecting the chloride from deliquescence, and so allows it to be kept for a considerable (if not indefinite) period, and the mixture is always ready for use. Two bottles, containing respectively the pure chloride, and a mixture of the chloride and oxide, have stood on the shelves of the writer's library for about a year, and now present the following conditions : the first has attracted about two drachms of water from the atmosphere ; the second is still as pulverulent as ever. At first, different proportions of the ingredients were employed, according to the effect desired ; but subsequent experience has shown the advantage of keeping to one formula, by which more uniformity of action can be secured, and at the same time the remedy is as manageable as if diluted to a much greater extent. It consists of the *dry* chloride and oxide of zinc, accurately mixed, in equal proportions. The mixture may be preserved in a wide-mouthed bottle, having an accurately-fitting stopper. It is said that a chemical combination occurs between the chloride and oxide ; but, so far as can be decided, no great loss of activity results.

If, then, it is desired to produce a slough, a little may be taken from the bottle by a silver or bone spatula, and "dusted" over the surface of the sore by the aid of a piece of common muslin, or, if more convenient, it may be made into a paste with a little water, and then spread by the spatula. When a superficial slough is required, a slight application will suffice ; but to secure a deep eschar, the powder must be laid on to the thickness of ordinary card-board : the edges of the sore should be dried to the limit intended, and then a little ointment may be smeared on the surface as a further protection from the salt ; the oxide will prevent the action of the escharotic from spreading beyond due limits, so that the effect may be accurately determined.

Chloride of zinc acts as a cauterant by, first, its power of abstracting water from the tissues ; and, secondly, by its combining with the albuminous and gelatinous compounds, to

form definite chemical products ; hence its escharotic effect may be arrested by free dilution with water. It produces considerable pain, of some hours' duration, and if applied freely, a firm, leathery slough separates in a few days. It is free from the dangers of arsenic and some other caustics, as it is not absorbed, probably on account of its chemical action on the solid and fluid parts. Its influence in arresting or modifying morbid action is far greater than that of any other chemical agent. In hospital gangrene, it has repeatedly succeeded in arresting the disease after the acids had failed. In these cases it should be accurately inserted under the edges of the undermined skin, by means of a spatula, so as to destroy such parts as are compromised by disease. If these conditions be secured, a second application will seldom be required.

In certain forms of tertiary syphilitic ulceration, attended with great pain and irritability, it produces the happiest results. It answers well, too, for the enucleation of a chancre, and in the serpiginous ulcers of the face. At the London Hospital, it is largely used to alter the conditions of foul and indolent sores in all parts, and rarely fails to ensure a healthy disposition. In some instances of epithelial infiltration of the skin around the orbit, its application has produced a good effect.

The above-named conditions are but a few of those for which the remedy is adapted. It would be foreign to the purpose of this paper to pursue the matter further ; but, in a word, it may be said that chloride of zinc will answer almost every purpose for which escharotics are employed.

It is to be observed, that its employment has sometimes been attended with more effect than was desired, and instances have occurred in which it disappointed the anticipations of those who applied it ; but surely this could be said of every remedy in the *Materia Medica*, for the efficient administration of every agent requires special attention and experience in all the conditions necessary to its effectual and intended use.

In making these observations on the value and use of chloride of zinc, it has been the writer's aim to record the general results of his individual experience of its application, and to state what he believes to be the most convenient and effective mode of employing the remedy. He is assured, from the extensive use of chloride of zinc in hospital and private practice, over a period of many years, that a few trials will lead others to the same conclusions which he has formed of its great superiority over all other potential cauteries.—*Lancet*.

CONSUMPTION OF ANIMAL FOOD IN FRANCE.

A DOCUMENT from the French Home Office gives the statistics of animal food consumed in France. The average per head all over the empire is 54 kilogrammes per annum, being little more than 60 lbs. ; yet this is an enormous improvement when compared with the consumption of butchers' meat under the first Napoleon; as in 1812 only 17 kilogrammes per individual were eaten. Paris is much above the average, each inhabitant of the capital being set down as devouring 64 kilogrammes; Lille, Strasbourg, and some towns in the northern departments, being equally carnivorous. The most vegetarian districts are Poitou and Le Limousin, where the peasantry have not changed their wretched diet of chestnuts since the visit of Arthur Young. They are stinted to 41 kilogrammes of animal food.—*Edinburgh Journal*.

ALLEGED ORIGIN OF DIPHTHERIA.

A CORRESPONDENT of the *St. James's Chronicle* says, "I was in the neighbourhood of Boulogne in the autumn of 1856, and had my ears open to every account of the dreadful malady which at that period raged with such violence in Boulogne as to cause a panic among the inhabitants. I was informed that the complaint originated as follows. The Emperor had established a camp at Ambleteuse, near Boulogne. Amongst the horses, that dreadful scourge, glanders, broke out, and all endeavours either to cure or stop the malady having failed, the result was the breaking up of the camp. Previous to this, and upon its departure, the dying and dead horses were bought as food for pigs, which at that season were fattening both for pork and bacon, and those persons who partook of the latter for food were attacked with this hitherto unknown malady, which rapidly became a communicable one, either as epidemic or infectious."

ANALYSIS OF THE BLOOD IN HYDROPHOBIA.

THE *Clinique Européenne* states that, according to Professor Ragsky's analysis, in cases of death from hydrophobia the blood is found to be nearly neutral, while in its normal state it is slightly alkaline; that it contains 79·59 parts of water, instead of 80, and has only 2·92 solid parts, instead of 4·42, which it has when in a healthy state.—*Lancet*.

THE ACTIVE PRINCIPLE OF KOUSSO.

M. PAVESI, and subsequently M. Vée, have succeeded in extracting the active principle of kouso: they call it koussine, or tænine, as being a specific against tapeworm. They treat 300 grammes of kouso with 1000 grammes of alcohol, and 25 grammes of hydrate of lime, at a temperature of from 140 to 150 degrees of Fahrenheit; the residue is also digested in 600 grammes of barley-water. The solutions thus obtained are mixed together, filtered, and precipitated by acetic acid. Koussine is yellow, bitter, insoluble in alcohol and in alkalies, and does not crystallize.—*Lancet*.

REMARKABLE FECUNDATION IN A COW.

Mr. M. B. FORBES, M.R.C.V.S., Reigate, has sent us the following particulars relating to the birth of five calves at one time.

A cow of the short-horn breed, six years old, the property of Mr. Richard Knight, farmer, Santon, about a mile from Reigate, was safely delivered on Monday morning, the 21st of February, *three weeks before her time*, of five calves—four bulls and one cow. Three of the calves died a few hours after birth; but the fourth survived until Tuesday, and the fifth until the following day, Wednesday.

Mr. Forbes saw the cow on the 23d, and found her going on well. It was her third calving.

Extracts from British and Foreign Journals.

ON THE COMPOSITION AND NUTRITIVE VALUE OF COTTON-CAKE.

By AUGUSTUS VOELCKER.

AN important addition to our stock of feeding materials has recently been made in the shape of cotton-cake. This cake can now be bought according to its quality, at from 6% to 8% per ton, and appears to offer considerable economic advantages to the feeder of stock in comparison with other descriptions of cake. Several agriculturists, who have used it in limited quantity, speak favorably of its nutritive properties, but precise comparative feeding experiments are yet required before the practical value of cotton-cake, and its relative merits, in comparison with linseed and other descriptions of cake, can be determined with certainty. To my knowledge it is now being tried on a large scale in various parts of this country, and ere long we may hope to obtain the desired information. We shall then be able to ascertain how far the theoretical value of cotton-cake, as deduced from analysis, corresponds with its practical effects on the system.

This cake is obtained on submitting to strong pressure the oily seeds of the cotton plant (*Gossypium barbadense*), which, as is well known, is cultivated extensively in the southern part of the United States, in India, China, the interior of Africa, and other warm climates.

Cotton-seed yields a dark-brown coloured, semi-liquid, and agreeably smelling oil, which, in a purified state, is now used to some extent for the usual purposes for which other kinds of oil and fats are employed. The removal of the dark colour which the oil possesses in a raw state appears to be attended with considerable difficulties, which as yet have only been partially overcome. This, perhaps, will account for the fact that even now large quantities of cotton-seed are annually thrown aside as useless, or are used to some extent as a manure. However, the production of cotton-seed oil has been steadily increasing, and large importations into England of cake, chiefly from St. Louis and New Orleans, have been effected during the past season. It may be confidently expected that the practical difficulties that stand in the way of the purification of the oil will soon be removed, and there can be but little doubt that then a constant and large

supply of cotton-cake will be furnished to the English feeder of stock.

The first cargoes of cotton-cake were imported into England some years ago, but the trials of it were not very successful. This need not surprise, for the introduction of every new article into the market is beset with difficulties. Perhaps the partial failures that attended the use of the early shipments of cotton-cake arose from the crude methods of preparing it, and the inferior, half-spoiled state in which it was given to animals. Probably also the first cargoes that were brought to England found no immediate purchasers; the cake had therefore to be warehoused for a considerable length of time, during which it got mouldy by damp air, sour, and unpalatable, before it found its way into the feeding stall. Even now some cotton-cake is so mouldy and sour that it is hardly fit to be given to animals. But there is another reason for the unfavorable opinion entertained by those who tried the practical feeding value of this cake when first imported into England. The albuminous soft kernel of cotton-seed is encased in a hard, dark-coloured shell, composed chiefly of woody fibre, and as the hard shell constitutes a large proportion of the whole seed, and woody fibre possesses little or no feeding value, all the cake that reached this country some years ago being made of the whole seed, was of inferior quality, in comparison with linseed or even rape-cake.

I remember having analysed a sample of cotton-cake of this description four years ago. It contained only $5\frac{1}{2}$ per cent. of oil and more than 30 per cent. of woody fibre.

Such inferior cake is still prepared in the United States as well as in England. The cake, however, made in this country from the whole cotton-seed is, I find, superior to the similarly prepared cake of foreign make.

For the last year or two a very much better article has been sent over from the southern parts of the United States. It is prepared from the shelled or decorticated seed, and is sold at present as decorticated cotton-cake at 7% to 8% per ton, or at about 1% to 30s. more than the ordinary cake made of the whole seed. It occurs in commerce in two forms, namely, as thin and as thick cake. The latter, on account of the inconvenience which it presents to the consumer (as it is not readily crushed by ordinary oil-cake crushers), is reduced to a coarse powder by an American firm, who are large importers of both thin and thick decorticated cake. The coarse powder is sent to England in original bags, which are marked "Patent Kiln-dried Oil-meal," and also bear the name and address of the exporter.

We have thus, as far as I know, the following four varieties of cotton-cake offered for sale in the English market :

1. *Thin decorticated cotton-cake.*
2. *Thick decorticated cake.*
3. *Ordinary cake made of whole seed.*
4. *Oil-meal.*

Having analysed recently samples of each kind, I now beg to lay before the public the results of my examinations, and to accompany the analytical data by a few observations that may assist intending purchasers in selecting for themselves the best description of cotton-cake. No other description of cake is subject to so great variations in composition as cotton-cake. In practical feeding experiments it is therefore most desirable that the composition of the cake should be stated, or, at any rate, the kind of cake be accurately described.

The following results plainly show that cotton-cake has been sold this year in England which is more than twice as nutritious and fattening as other samples. Those who have been fortunate enough to secure the best decorticated cake I doubt not will be led by their experience to consider it a most valuable feeding substance, whilst the experience of buyers of inferior cake, made from the whole seed, must lead to a much less favorable practical opinion.

1. THIN DECORTICATED COTTON-CAKE.

This cake, as mentioned already, is made from the shelled seed. It has about the same thickness and shape as American linseed-cake, but differs from the latter in outward appearance and in composition. The best decorticated cotton-cake has a light yellow colour, and is free from any strong smell; neither has it any well-defined taste. It shows here and there a few threads of cotton-fibre, and contains very little of the dark-brown coloured seed-shells. Mixed with water, in a roughly powdered state, it does not become gelatinous like linseed-cake, nor does it develop any pungent smell under this treatment like rape-cake.

Cotton-cake does not contain any large amount of mucilage, nor anything that produces on mixing with water a volatile, pungent, and injurious essential oil.

Cattle often take at once to it, and even when fed upon linseed-cake they soon get accustomed to the taste of cotton-cake, and apparently eat it as readily as linseed-cake.

In the following Table I have incorporated the results obtained in the analysis of seven samples of decorticated cotton-cake :

COMPOSITION OF DECORTICATED COTTON-CAKE (THIN CAKE).							
—	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.
Water	7.67	8.27	9.01	10.37	10.01	9.41	10.19
Oil	14.93	19.19	17.93	13.98	17.21	15.64	13.50
* Albuminous compounds (flesh-forming principles)	43.21	42.62	41.81	40.68	40.48	42.75	37.18
Gum, mucilage, sugar, and digestible fibre (heat-producing matters)	14.47	12.25	13.67	18.88	18.09	14.83	22.97
Cellulose (indigestible fibre)	11.45	10.12	8.80	9.01	6.67	7.71	8.71
†Mineral matters (ash)	8.27	7.45	8.78	†7.08	7.54	9.66	7.45
	100.00	100.00	100.00	100.00	100.00	100.00	100.00
*Containing nitrogen	6.91	6.82	6.69	6.58	6.47	6.84	5.95
†Containing sand	Not determined.			0.68	1.53	{ Not deter- mined }	.46
” earthy phosphates	—	—	—	—	—		4.27
” alkaline salts, including phosphoric acid	—	—	—	—	—		2.77
							.82

These analytical results suggest the following observations :

1. The proportion of oil in all the samples analysed is

higher than in the best linseed-cake. In the best linseed-cake the per-centage of oil rarely amounts to 12 per cent., and 10 per cent. may be taken as a fair average. As a direct supplier of fat, cotton-cake therefore is superior to linseed-cake.

2. The amount of oil in samples sold under the same name is subject to considerable variations. In the oiliest cake, No. 2, there is 19·19 per cent., and in No. 7 only 13·50 per cent. of oil. The greatest difference in these cakes in this respect thus amounts to about $5\frac{1}{2}$ per cent.

3. Decorticated cotton-cake contains a very high and much larger per-centage of flesh-forming matters than linseed-cake. This circumstance suggests that cotton-cake may probably be given with great advantage to young stock and to dairy cows. As by far the largest proportion of nitrogen of food is not assimilated in the system, but passes away with the excrements of animals, the dung produced by stock fed upon cotton-cake will be found particularly valuable.

4. In comparison with linseed-cake there is much less mucilage and other respiratory matter in cotton-cake. This deficiency, however, is compensated to a certain degree by the larger amount of oil in cotton-cake.

5. The proportion of indigestible woody fibre in decorticated cotton-cake is small, and not larger than in the best linseed-cake.

6. Lastly, it may be observed that the ash of cotton-cake is rich in bone-materials, and amounts to about the same quantity as that contained in other oil-cakes.

On the whole, I am inclined to think, as far as I am able to judge on the strength of the preceding analytical indications, that the best decorticated cotton-cake possesses theoretically about the same nutritive value as linseed-cake. Cotton-cake, of average quality, is probably somewhat inferior to linseed-cake of average composition.

The physical condition of all the cakes, with the exception of No. 4 and No. 7, was excellent. No. 7 was not quite so fresh as the majority of the cakes, whilst No. 4 was decidedly an old badly kept cake. It was very mouldy, and tasted quite sour, and appeared hardly fit to be given to animals. Cows and sheep refused at first to eat it, but pigs eagerly devoured it. After some time, however, both sheep and fattening cows took to it, and notwithstanding its sour taste and bad condition, I am informed, did well upon it.

I refer here to the condition of cake, because an analysis does not generally indicate whether a cake is new or old, well or badly kept, or otherwise injured. It is important to

bear this in mind, for there can be no doubt that animals will thrive better when fed upon fresh and sweet than upon old, mouldy, or sour cake.

The preceding seven analyses, on calculation, yield the following average numbers, expressive of the *average* composition of thin decorticated cotton-cake :

Water	9.28
Oil	16.05
*Albuminous compounds (flesh-forming matters)	41.25
Gum, mucilage, sugar, and digestible fibre (heat-producing materials)	16.45
Cellulose (indigestible fibre)	8.92
Mineral matters (ash)	8.05
	<hr/>
	100.00
* Containing nitrogen	6.58

(*To be continued.*)

EXPERIMENTAL RESEARCHES ON THE PHYSIOLOGICAL PROPERTIES OF BLOOD CHARGED WITH OXYGEN AND OF BLOOD CHARGED WITH CARBONIC ACID.

By M. E. BROWN-SEQUARD.

THE scientific researches of MM. Dumas and Prévost are well known, which prove that the blood of sheep or of cows kills rabbits like a violent poison, and that the blood of the mammifera, injected into the veins of ducks, occasions immediately strong convulsions and death.

M. Rayer has likewise mentioned having seen rabbits die almost instantly, after convulsions, when 5 grammes of human blood, defibrinated by beating, were injected into their veins. M. Rayer has even found three grammes of blood sufficient to kill a rabbit.

Dieffenbach, Bischoff, and J. Müller, after finding that defibrinated blood could be injected with less danger than non-defibrinated blood, thought that the fibrine of the blood of one animal was probably a poison to an animal of another species. In 1838, Bischoff made a discovery which should have led him to ascertain the real cause of the violent convulsions and death so often observed on transfusion: he found that he could inject, without perceptible injury, the arterial blood of mammifera into the veins of a bird, whereas the venous blood instantly killed. Bischoff was astonished

at this result, and he found no other cause than "the difference between arterial and venous blood."

I find that venous and arterial blood only differ from each other with respect to the quantities of oxygen and carbonic acid which they contain: both will kill if charged with carbonic acid; neither will produce any disturbance if charged with oxygen. Numerous experiments have led me to the following results:—

1. The blood of any vertebrate animal, whether arterial or venous, proceeding from an animal of any of the four classes, and charged with oxygen until it is of a rusty red, may be injected without danger into the veins of any vertebrate animal, provided that the quantity be not too considerable.

2. The blood of any vertebrate animal, whether arterial or venous, sufficiently charged with carbonic acid to be blackish, cannot be injected into the veins of any warm-blooded animal (mammal or bird) without producing phenomena of asphyxia and generally death, after violent convulsions, provided that the quantity of blood be not less than a five hundredth of the weight of the animal, and provided also that the injection be not made too slowly.

I have injected into the jugular vein of dogs, the blood of rabbits, guinea-pigs, cats, cocks, hens, pigeons, ducks, tortoises (three species), frogs, and eels. When I used fresh arterial blood, or venous-blood defibrinated and charged with oxygen, I have never observed anything but a momentary alteration of the respiration and of the circulation, which always follows transfusion by the jugular vein, even when using the blood of the same animal, an alteration which depends, doubtless, principally on a distension of the right auricle by the blood injected. I have injected from 20 to 40 grammes of different blood into a dog without producing any great effect upon its health. In other experiments, in which, before the transfusion, I have taken as much blood from the dog as I intended injecting, I have introduced with impunity into the circulatory system as much as 100, and on one occasion, 150 grammes of a bird's blood. I have likewise transfused, without injury, the blood of hens and pigeons into rabbits. On the other hand, with hens, cocks, and pigeons, after taking from them from 10 to 20 grammes of blood, I have, with impunity, transferred a similar quantity of the blood of dogs, guinea-pigs, or rabbits.

During these experiments, especially when operating on birds, there may arise difficulties of the respiration and circulation, and even death may suddenly supervene, when we inject the blood too quickly, or in too large a quantity; but

this will occur quite as readily if we use the blood of the same animal as of that of a different species.

When, instead of blood charged with oxygen, we use blood charged with carbonic acid, death is produced according to the phenomena so well described by MM. Prévost and Dumas, and afterwards by Dieffenbach, Rayer, Bischoff, &c. What is the cause of death? We think that it depends on the poisonous action of the carbonic acid.

It may appear strange that violent convulsions and a very rapid death should be attributed to an agent which always exists in the blood and in a quantity not inferior to that in which it is found in the transfused blood. It will appear, at first, scarcely admissible that carbonic acid, which appeared so innocent in experiments performed by operators of the first order, can have so great a poisonous power as that which I have attributed to it. But it is easy to explain how carbonic acid has not manifested its poisonous power in the experiments of the observers of whom I speak. Like many other poisons, the quantity of this in the blood must attain a certain degree to manifest its poisonous effects, a degree which has not been reached in these experiments. In Roupell's researches and in those of Lehmann, in which, on the contrary, this point has been passed, the poisonous phenomena showed themselves, and recently in those cases in which, among women, carbonic acid has been absorbed by the vaginal and uterine mucous membranes, vertigo and other phenomena have been produced.

However it may be with regard to the facts which have already been published, here are new and direct proofs of the influence of carbonic acid; we remove 50 grammes of blood from a dog, and, after defibrinating it, we saturate it with carbonic acid, we then inject it into the jugular vein, towards the heart, of either the same animal or of another animal of the same species, and we see the animal die very quickly, after exhibiting the violent convulsive phenomena of a sudden and complete asphyxia. With other mammifera and birds we find the same thing occur. Moreover, we find that the death is more rapid and the convulsive phenomena all the more powerful, as the quantity of carbonic acid contained in the injected blood is more considerable.

If the injection be made very slowly, so that the animal shall have time to exhale by its lungs the excess of carbonic acid which it receives, death will not supervene. On the other hand, if from a certain quantity of the blood, a portion of which has caused the death of an animal, we remove the carbonic acid and replace it with oxygen, this blood no longer

has poisonous qualities. I must add that, sometimes, by insufflating the lungs during and some time after an injection of blood charged with carbonic acid, we may restore life to animals who have died in convulsions in consequence of the injection.

If the quantity of blood charged with carbonic acid is too small, the animal will not die, but it will present phenomena of poisoning to a greater or less degree; thus with a horse, which was vigorous, although ill, at Alfort, I injected the blood of three large fowls (about 120 to 125 grammes) without causing death; there was only a temporary acceleration of the movements of the heart and respiratory efforts, with some symptoms of pain and oppression. Nevertheless the animal died within five days after the operation.

When we compare the phenomena of a complete asphyxia with those which show themselves so quickly after an injection of blood charged with carbonic acid, we find that they are precisely similar to each other, with this difference only, that they are more violent in transfusion than in asphyxia. It appears, in the two cases, that the phenomena in question depend on poisoning by carbonic acid.

Conclusions.—1st. The blood of a vertebrate animal of one species is not a poison for vertebrata even of the remotest species.

2d. The poisonous action of the blood of an animal injected into the vessels of an individual of another species depends principally, when it exists, on the presence of carbonic acid in sufficiently considerable quantities.—*Comptes Rendus.*

THE INTRODUCTION OF EUROPEAN ANIMALS INTO AUSTRALIA.

THE extended introduction of useful animals into our Colonial possessions, occupies, we are glad to perceive, a large share of public attention, and will, we hope, lead to ultimate beneficial results.

The columns of the *Times*, which are usually available during the Parliamentary recess for the discussion of topics of social and general interest, have recently been made use of by Mr. Edward Wilson, of Melbourne, who, in a very sensible letter, brings prominently forward the importance of the introduction and diffusion of European animals over the Australian continent and islands. Without following Mr.

Wilson in the poetry of his subject, when he inquires, "Why should the heart of our ploughman not be gladdened by the song of the skylark? and why should the daughter of Australia, as she lingers with her lover upon a moonlight evening, be deprived of one more felicity, one more topic of conversation, in the nightingale perched in the neighbouring thicket?" we may confine ourselves to the utilitarian and practical point of view.

When we see what has been already done in Australia for the comfort and sustenance of man, there is ample encouragement for further spirited exertion. The country, soil, and climate are highly favorable to the spread and support of living creatures. "It is but the other day," remarks Mr. Wilson, "that we got the sheep; yet we already supply Great Britain with the chief portion of her finer wools. The first cow was imported within the memory of living man; and now vast herds roam over millions of acres, from Wide Bay to South Australia, and good judges are beginning to ask whether the colonial cattle will not bear a favorable comparison with the English average. We have got the horse, unrivalled in the whole world for his powers of endurance; for were the deeds of our grass-fed stock-horses but whispered within your well-kept English stables the narrative would be roared down by a general chorus of incredulous horse laughter. The 'time' of our races would compare not very unfavorably with your own. And thus, with the dog, cat, pig, domestic fowl, duck, rabbit, pigeon, down to our old friends the common house-rat and mouse, which, with their own amusing pertinacity, stick by us with a fidelity worthy of a better cause, and, multiplying exceedingly among us, give a home-aspect to our colonial houses in their own ingenious and significant style."

The demand for mutton and beef and pork will lead to improved breeds of these live stock. Poultry, which have been little attended to, will greatly increase, in order to keep pace with the demand. Turkeys, we perceive, are fetching 25s., geese 10s. to 12s., ducks 6s., and fowls 5s. a-head in the Melbourne market. Dairy produce is also brought to market on a very limited scale, or such prices as these would not be realized in an old colony—fresh butter 3s. 6d. a pound, milk 1s. a quart, and eggs 3s. 6d. a dozen. All the cheese consumed is also imported. The absence of good roads, and the expense of transport from distant farms to the town, has doubtless had something to do with prices and supply. But the extension of railways and common roads, the water communication by steam on the Murray river, and other

tributary streams now available, will greatly facilitate the forwarding of dairy produce to market, both to Adelaide and Melbourne.

In the matter of horses, of which Mr. Wilson speaks so favorably, the demand for them for India, and increased local wants which population brings with it, will lead to great extension of horse-breeding.

It appears that the flock of alpacas for Victoria are to be sent out in the Goddess, which will sail in a few days. They are under the charge of a competent attendant, obtained from the Zoological Gardens. There is no doubt other introductions of new animals will follow. The Angora, or Thibet goat, which the Cape colonists and the South Australians are now trying to acclimatise, should also be introduced into Victoria. We pointed out a few months ago the great importance of these efforts for the future of Australia. It is a great disgrace that the camel has never yet been introduced into the colony. What an admirable beast of burden it would prove for the use of the explorer in the interior deserts, which have hitherto proved so fatal a barrier to progress and communication across the Continent! The animal could be obtained very cheaply in Algeria, Tunis, or by way of the Red Sea. The colony of Victoria has ample funds at disposal; and what a benefit would a thousand pounds or two be, laid out for such a purpose, conjointly with the colony of South Australia, on public grounds, for the introduction of the camel, especially for exploring purposes! We should then not imperil the lives of those bold explorers who go forth to trace out the unknown parts of that great island-continent, destined to play hereafter a prominent part in the roll of history, and whose coasts are now being rapidly filled up with population, while sheep and cattle are depastured by millions over its widely-extended plains.

Other suggestions are thrown out by Mr. Wilson deserving notice; and certainly there is no reason why the table of the colonist should not be supplied with an occasional hare or pheasant, or why the alderman of the antipodes should not have his salmon cutlet, or his slice of venison, as well as his English *confrère*. The introduction of game-birds has not yet been very successful; but then the attempts made have been only partial, and on a limited scale. It is of no use to turn adrift a dozen pheasants in the woods, and to call that trying an experiment, in the proper acceptation of the term. The game of Australia is at present very limited, and getting more so, as the natives depend entirely upon it for their support. Kangaroo-tail soup is not bad; and the popular

colonial dish called a "steamer," which it furnishes, is well known. The flesh of the wombat, the bandicoot, and even of the opossum, may do for the bushman. The flesh of the emu is passably good; but this bird, the kangaroo, and the other native animals, are becoming rare as settlement advances, a war of extermination seeming to have been declared against them.

It is satisfactory to find that a zoological society has been formed at Melbourne, which has received from the Government a valuable tract of land, and a grant of £3,000, for the introduction of new animals.

Besides the broad question of interest and profit to be gained by individuals in this movement, we heartily concur in the desire "to see the good things of the earth spread as rapidly as possible over every portion of its surface, and to find every reasonable effort made to multiply, as far as can be, the legitimate enjoyments of mankind.—*Farmer's Magazine*.

CULTURE OF BEES'-WAX IN RUSSIA.

THE rearing of bees is extensively carried on in the several parts of European Russia, particularly in the central and southern governments, as well as in the Polish and in trans-Caucasian provinces. This insect acclimatizes up to a very high latitude, even in Siberia. It was long thought that the climate of the latter country was utterly unsuitable for the rearing of bees; but experiments made at the commencement of the present century in the governments of Tornsk, Orusk, and Jemissiesk, have proved to the contrary. It has greatly suffered, however, in some provinces, from the destruction of the forests, for the bee prefers well-wooded districts, where it is protected from the wind. The honey procured from the linden tree (*Tilia Europæa*) is only obtained at the little town of Kowno, on the river Niemen, in Lithuania, which is surrounded by an extensive forest of these trees, and where the rearing occupies the principal attention of the inhabitants. The Jews of Poland furnish a close imitation of this honey, by bleaching the common kinds in the open air during frosty weather.

The total production of wax in Russia is estimated at 5,412,000 pounds per annum; and as the usual calculation is three pounds of honey to one of wax, this supposes a production of 16,236,000 of honey, the whole being valued at 2,250,000 dollars.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire, Bruxelles.

ON PARASITIC VEGETATION IN LIVING ANIMALS.

By T. GLUGE, M.R.A. of Belgium, and J. DUDEKEM, Corresponding Member of the same Academy.

MANY observations are recorded of fungi being developed in the respiratory organs of birds. M. Robin, in his work on these parasitical growths, has grouped them all in one article, under the title of 'Champignons de la tribu des Aspergillées' (p. 515, 2me edition). According to these observations the fungi have always been found under the same condition, *i.e.*, that of being developed in the air-passages of the different species of birds. They do not, however, grow from the mucous membrane which lines these organs, but on a special deposit having somewhat the appearance of a pseudo-membrane. M. Robin considers this deposit as a peculiar morbid product, and in this he agrees with MM. Eudes de Longchamps, Montagne, &c. MM. Müller and Retsius, who had previously investigated this subject, are of opinion that the depositions are in themselves of a vegetable nature, and that the fungi developed on their surface is merely an additional parasitic growth. In the presence of these conflicting opinions our authors state that they have been fortunate enough to be able to study for themselves some new cases, three in number, of which they give the following description.

The *first* was in a royal eagle, and the *two others* in ostriches. Professor Thiernesse having obligingly sent to the authors a pathological specimen taken from an eagle, which had died at the Zoological Garden of Brussels, consisting of part of the lung, windpipe, and bronchial larynx, it was found that the lung was studded with small tumours, about the size of a grain of maize, of a light yellow colour, and easily compressible under the fingers. On the edges of the lung these tumours were more numerous than in the centre; and on the mucous membrane of the bronchial larynx were layers of a pseudo-membrane of different thicknesses;

which were covered with similar round-shaped bodies, of various sizes, and having also a whitish-yellow colour. No true adhesion, however, existed between the mucous membrane and these deposits.

The layers of pseudo-membrane, with their rounded masses, presented at certain spots on their surface a coating of a dark-green colour, varying in some places to a pale green. On examining this by the microscope it was found to be composed of *Mucedineæ*, designated by botanists the *Aspergillus glaucus*.

Second Observation. — The pathological specimen of this case was sent by M. Poelman. It consisted of a portion of the trachea of an ostrich. It had been kept for some days in alcohol, which had somewhat altered its original condition. The trachea presented nothing abnormal in its upper portion, excepting a yellow spot of about half an inch in length. This spot was covered with a layer of mucus, which had been coagulated by the effect of the alcohol. It was found to be placed in the mucous membrane, and to have in the centre of its exposed surface a small excavation. Concentric zones, limited by a margin, covered the surface. The inferior half of the trachea had a more singular appearance. It was filled with a quantity of yellowish matter, which was intermixed with *coagulated* mucus, probably from the effect of the alcohol. There were also some foreign bodies present, having an appearance like the remains of the grains which had been taken as food by the bird. This yellowish substance was found in greater quantity in the bronchial division of the tube, which was here nearly obliterated by its presence. At first sight these deposits did not appear to have any particular shape, but on a closer inspection it was found that an initial form presided in the development of each of them. The smallest spots had the form of a disc, were somewhat convex on their upper and excavated on their inferior surface, corresponding with the mucous membrane, with which it only formed a slight adhesion. The larger spots presented a ragged appearance superiorly, which seemed to arise from the layers being superimposed one on the other. On attentively examining the specimen by the microscope, it was found to be of the same nature as one previously described.

Third Observation. — The subject of this investigation was furnished by M. Poelman. The morbid product was found in the respiratory organs of an ostrich. We omit the details, which are a repetition of the others. The microscopical examination gave the same results as in the former cases.

If these observations are compared with those collected by M. Robin, the results will be found to be the same ; but it would be too tedious to enter into a critical examination of each of them. In a lecture delivered by M. Robin he has given a description of the soil on which the *aspergillus* grows, and the plates of MM. Müller and Retsius prove the truth of our assertion. From these and other observations the following conclusions may be drawn :

1st. That birds are subject to a particular malady characterised by the development of cryptogami on the mucous membrane of the respiratory organs.

2dly. That this malady has been observed in birds of all species : *A.* In the eagle by M. Thiernes; in the owl by MM. Müller and Retsius.

B. In the sparrow by M. Mayer ; in the crow by MM. Müller and Retsius, and in the starling by Rayer and Montagne.

C. In the climbing birds, as in the parrot, by Rousseau and Serrurier.

D. In gallinaceous tribes by M. Robin.

E. In the plover by Spring ; in the stork by Hensinger ; in the flamingo by Owen ; and in the ostrich by Poelman.

F. In the palmipedes, as in the duck, by Eudes de Longchamps ; and in the swan by Mayer.

3dly. That death supervenes in birds where this development is considerable, so as to interfere with normal respiration.

4thly. That the cryptogami in question have the form of tubercles when existing in the pulmonary cells ; but when developed in the bronchial larynx they assume the form of small discs, which are either isolated or united in large layers ; and when in the trachea, they form simple masses without any defined shape.

5thly. That it is impossible with the incomplete materials which we at present possess to assign a correct botanical place to these cryptogami. It is probable that when better understood they will be placed among the Mucedineæ.

6thly. That these cryptogami almost always present on their surface the *aspergillus* which we consider as a parasite of them.

ON MILK WHICH DOES NOT YIELD BUTTER, AND THE MEANS TO REMEDY IT.

By M. F. DENEUBOURG, late Veterinary Surgeon to the Government.

THE author calls the attention of those who are chiefly interested in such cases, in which there is no disease of the mammary gland, nor loss of milk, but a want of oleaginous matters in the fluid. In the causes of this deficiency of butter-making quality, he concludes that there are *two* principal ones, *viz.*, idiosyncrasy and alimentation; but there is another, which can be so easily defined, and which occurs in animals that are well kept, and whose milk has been previously rich in butter. It is to these that the remedy is principally directed. The remedy consists in giving the animal two ounces of the sulphuret of antimony, with three ounces of coriander seeds, powdered and well mixed. This is to be given as a soft bolus, and followed by a draught composed of half a pint of vinegar, a pint of water, and a handful of common salt, for three successive mornings, on an empty stomach.

This remedy, according to the author, rarely fails, and the milk produced some days after its exhibition is found to be richer in cream. The first churning yields a larger quantity of butter, but the second and the third are still more satisfactory in their results.

A letter from a farmer states that he had fourteen cows in full milk, from which he obtained very little butter, and that of a bad quality. Guided by the statements of M. Deneubourg, which had appeared in the *Annales Vétérinaires*, he had separately tested the milk of his cows, and found that the bad quality of it was owing to one cow only, and that the milk of the others yielded good and abundant butter. It was therefore clearly established that the loss he had so long sustained was to be attributed to this cow only. He at once administered the remedy recommended by M. Deneubourg, which effected a speedy cure.

Veterinary Annual for 1859. Second Year.

By M. VINCENT MAZURKIEWIEZ, Secretary to the Registrar of the Imperial Veterinary School of Alfort.

THIS annual contains, besides much useful information of another kind—

1st. A Diary and Almanac.

2dly. A List of all the Veterinary Surgeons, civil and military, in France.

3dly. A Memory Aid of Pharmacy and Materia Medica, consisting of more than 500 formulæ, together with a review of Therapeutics, &c.

It begins with the diary, which is followed by an account of the several veterinary establishments. There are in France three veterinary schools, namely, one at Alfort, a second at Lyons, and a third at Toulouse. To be admitted a pupil of these schools a preliminary examination is necessary. The time of study is four years, the studies being divided into four classes, one for each year. At the end of each session a class examination is held, and such students as are found wanting are not allowed to enter the next upper class. The term of study may thus be extended over six or seven years. Each session occupies ten months. The number of diplomas granted in 1858 was, for ALFORT, 41; LYONS, 13; and TOULOUSE, 25.

There are six veterinary societies, the first of which is the *Imperial and Central*, which holds its meetings at the HOTEL DE VILLE of PARIS, every second Thursday in the month. The other five are departmental societies. Besides these there is a veterinary section at the *Imperial Institute*, and also at the *Academy of Medicine*. There is likewise an *Imperial and Central Society of Agriculture*, founded in 1788, which has corresponding societies in almost every department in France. In all these societies prizes are given, in which veterinary science comes in for a large share.

We next come to an account of the FOREIGN VETERINARY SCHOOLS, of which the author gives a very good account, commencing his description with the ROYAL VETERINARY COLLEGE OF LONDON. Referring to the SCHOOL AT BRUSSELS, he observes that this is conducted on the same plan as the one at ALFORT, four years of study being required from each pupil, &c.

There are in BELGIUM one *Veterinary Society* and three periodicals devoted to the progress of the science, namely, the *Annales de Médecine Vétérinaire*, the *Revue Populaires des Sciences*, and *Le Scalpel*. The two former are published monthly, and the latter on the 10th, 20th, and 30th of each month.

THE VETERINARIAN, APRIL 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

APPOINTMENT OF PROFESSOR SPOONER AS AN EXAMINER OF HORSES AT THE ANNUAL MEETINGS OF THE ROYAL AGRICULTURAL SOCIETY.

It is with great pleasure we announce that the Council of the ROYAL AGRICULTURAL SOCIETY OF ENGLAND have unanimously appointed Professor Spooner the Examiner of Horses at their Annual Meetings.

The labour of inspecting *all* the animals, and reporting thereon to the stewards, had fallen somewhat heavily on Professor Simonds, for although he was not without assistance, yet the responsibility rested entirely on him; but now that this division is made, each professor will be enabled to give his individual energies and talents to the performance of the duties of his respective office; and should an emergency arise, or any doubtful case present itself, by co-operation the difficulty will be surmounted. Thus will be secured the object the Society has always had in view, while at the same time the public will have full confidence in the correctness of the decisions which may be come to.

PROFESSIONAL ETIQUETTE.

It is but the repetition of a truism to say that there are few things which tend more to the advancement of any art or science than free and open discussion. Great is the pity, therefore, that this privilege should suffer by the injudicious conduct of those who have a right to employ it. Our daily experience bears witness to the fact that personal invective

and the impugning of motives are frequently substituted for liberty of thought and honesty of purpose.

Among the barriers to progress at the present day we see in too many instances the good intentions of individuals darkened by the shadows of suspicion which are cast upon them, and those who are endeavouring to promote the best interests of the art with which they are connected subjected to obloquy and reproach by the envious and captious. If men do not wrongly represent things, they will sometimes by trickery and chicanery endeavour to put themselves forward at the expense of others, leaving nothing undone to attain their end. Quackery of the most unblushing kind, publication of false cures, and even the adoption of assumed names, we have seen of late employed to deceive the public and enrich impostors. Retribution, however, sooner or later, comes with a crushing force upon persons so expert as these, and, like the "Bennetts," they reap their reward.

As public journalists, we have, perhaps, had but little to complain of as to the manner that discussion on matters of science has been carried on in our pages. Occasionally, although very rarely, have we been obliged to interpose our editorial right to strike out passages from the writings of our correspondents, because they infringed the rules which we originally laid down for our guidance. For these reasons we regret that in our present number one of these exceptional instances should be found, and that the communication of Mr. T. A. Dollar should appear shorn of some of its pretensions, but of none of its *merits*. The "*using a glandered horse in a public vehicle*," is so fresh in the minds of our readers, that they need not be told that Mr. Dollar's letter refers especially to that subject. If Mr. Dollar denies any animus towards Mr. Varnell by taking the course he did in this affair, we can truly say that no unworthy motive could possibly have influenced us in originally giving insertion to the case. It was one which we deemed to have in itself sufficient interest to warrant our bringing it before the notice of our readers, and, be it remembered, time does not militate against the value of a fact.

The imputation attempted to be cast upon us for supporting our colleagues we are content to leave unnoticed, only observing that we trust we shall always be able conscientiously to give them our professional support; and in the case in question the opinion expressed by Mr. Varnell was in perfect accordance with our own. We do not envy the state and condition of that mind which can find itself ready to condemn those who labour to produce unity and co-operation among men who are associated together to promote a public good. Vain boasting we repudiate, and, as such, we regret to observe that it pervades Mr. Dollar's communications throughout. If a man's professional reputation hangs on such a slender thread as this, its destruction is no less certain than quick. We can but admire the modesty of Mr. Dollar, as being akin to the whole proceeding, in telling us that we are yet ignorant of the symptoms which denote the existence of glanders! Ignorance, however, deserves pity, not censure; but what are the deserts of studied ambiguity of language, put forth to mislead the uninitiated? Will Mr. Dollar inform us why he has preferred to call the cicatrices left on the *septum nasi*, by the healing of the ulcers, *abrasions*? Of course there was nothing studied in the selection of this term, any more than there was in the request made to Mr. Mavor to speak lightly of the indications of the horse having had glanders in its acute form. We are content, however, to let the letter of Mr. Mavor, which we give elsewhere, explain this part of the transaction.

With reference to the curability of the disease, we could hardly have supposed, when we penned the remarks, that "the healing of the ulcers in the nostrils, and the diminution of the enlargement of the submaxillary glands, were the very cases to deceive the man of boasted specifics," that Mr. Dollar would apply the remark, in all its truthfulness, to himself. It seems, however, that his acumen has led him to do so, and he being thus content, we have no right to enter our protest against the act, as it affects only his own individual interests.

To the assertion that Mr. Varnell neglected in his second examination to state anything respecting the horse being glandered, we would observe that if "*scars on the septum of the nasal passages, and also enlargements of the submaxillary glands,*" are words meaning anything, they certainly convey to the mind of the veterinary surgeon the fact of the animal having indications of the disease in one of its stages. No blindness, however, is equal to wilful professional blindness; and this we are sorry to find Mr. Dollar the subject of to such a distressing extent.

With reference to the denial of the man, that anything was said about the animal having glanders, we have simply to ask if the *willing bearer of the untruth*—"that the horse belonged to Mr. Martin"—is to be believed in preference to the officers of the College, and others who stood by and heard the message delivered to him: "Tell your master not to have anything to do with him, for most likely the horse is glandered."

Here we must leave the subject; but we cannot do so without expressing a regret that so much of our readers' time should be occupied by matter so unworthy of our columns.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF COUNCIL, MARCH 16, 1859.

PRESENT: The President; Messrs. Barrow, Cartledge, Cheeseman, Cherry, Dickens, Ernes, Field, Greaves, Hunt, Jex, Pritchard, Robinson, Silvester, Stockley, Turner, Wilkinson, Withers; Professors Simonds, Morton, and Varnell, and the Secretary.

Professor Spooner, the President, in the Chair.

The minutes of the preceding Meeting having been read and signed, a letter was read from the Secretary of the Lord Advocate of Scotland to the Secretary of the College,

stating that his Lordship was desirous to have an interview with him, respecting the affiliation of the new Veterinary School of Edinburgh. An interview took place accordingly, on February 28th, and the mutual conclusion arrived at was—

“That the responsibility of granting the Sign Manual rested on Her Majesty’s Government, and the responsibility of the Examinations on the Board of Examiners.”

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Field*—

“That the letter and the results arrived at be entered on the minutes.” Carried.

A letter was read from Mr. Churchill, inquiring if a Mr. William Dale was a member of the Royal College of Veterinary Surgeons, he having issued a circular (enclosed) to that effect, to which the Secretary had replied in the negative.

It was moved by *Mr. Stockley*, and seconded by *Mr. Cherry*—

“That the Solicitor to the College be directed to take counsel’s opinion on the portion of the Charter to which the question applied.”

Carried unanimously.

A copy of Dr. A. Taylor’s work on ‘Poisons,’ presented by that gentleman to the Library of the College, was laid on the table, and on the motion of *Mr. Jex*, seconded by *Mr. Ernes*—

“The thanks of the Council were voted to Dr. A. Taylor for the same.”

A letter was read from Mr. Field, in which he declined to withdraw his resignation.

It was moved by *Mr. Ernes*, and seconded by *Mr. Silvester*—

“That Mr. Field’s resignation from the Board of Examiners be accepted.” Carried.

It was moved by *Mr. Silvester*, and seconded by *Professor Morton*—

“That a vote of thanks to Mr. Field, for his services on the Board, be passed.” Carried *nem. con.*

It was moved by *Professor Simonds*, and seconded by *Professor Varnell*—

“That Mr. William Mavor be elected a Member of the Board of Examiners.”

It was moved by *Mr. Field*, and seconded by *Mr. Turner*—

“That Mr. Pritchard be elected a Member of the Board of Examiners.”

On the ballot being taken, twenty-three papers were found in the vase, twenty-two members only being present, where-

upon the President declared the election to be null and void.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Turner*—

“That the election of a Member for the English portion of the Board be postponed to the next meeting of Council.” Carried.

It was moved by *Mr. Ernes*, and seconded by *Professor Simonds*—

“That the election of a Member of the Scotch portion of the Board be also postponed.”

It was moved as an amendment by *Mr. Wilkinson*, and seconded by *Mr. Dickens*—

“That the election now take place.” Carried.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Dickens*—

“That *Mr. Cartledge*, of *Sheffield*, be elected on the Scotch portion of the Board.”

On the ballot being taken, that gentleman was declared unanimously elected.

It was moved by *Mr. Cherry*, and seconded by *Mr. Jex*—

“That the giving greater publicity to the corporate body be entrusted to the Committee for general purposes.” Carried.

By order of the Council,

E. N. GABRIEL, *Secretary*.

Veterinary Jurisprudence.

NEWCASTLE SPRING ASSIZES.

MOOTHALL, *Saturday, Feb. 26.*

(*Before Mr. JUSTICE WILLES.*)

His Lordship took his seat on the Bench shortly after nine o'clock.

THE SHEEP-POISONING CASE.

Black v. Elliott.

In this case *Mr. Manisty*, Q.C., and *Mr. Davison* were for the plaintiff; and *Mr. Atherton*, Q.C., and *Mr. Overend*, Q.C., for the defence. A special jury were sworn, and the investigation of the case excited considerable interest.

Mr. Davison, in opening the pleading, said the declaration stated that in consideration that the plaintiff, at the request of the defendant, would buy of the defendant some sheep-dipping mixture, the defendant

promised that the mixture should be reasonable, fit and proper for the purpose, according to the directions; and it then averred that the mixture was not reasonable, fit, and proper, and that after dipping the sheep a great number died.

Mr. Manisty adverted to its importance as a question affecting the public, and proceeded to state the details. The plaintiff was a farmer, and had two large farms—one, the scene of the calamity he was about to describe to them, was called Burton, and was about three miles from the Lockhart Station on the North-Eastern Railway. This was a farm of about one thousand acres. He also farmed another farm at New Heaton. It would not be necessary, however, to call the attention of the jury to that farm. He merely mentioned it as being the place where the plaintiff resided, and the other one in question being a farm which was formerly occupied by his son-in-law, Mr. Brown, and to which Mr. Black succeeded in May, 1858. Mr. Brown had occupied that farm for some years. He had taken especial pains to get an extremely fine stock of sheep, and he believed in this he had perfectly succeeded. He was not able to carry on that farm; and Mr. Black, the plaintiff, purchased, with the farm, nearly all the stock, and between 800 and 900 sheep. Now, many of them would know better than he could state, that there had for long been a practice, at a certain time of the year, of dipping the sheep for the purpose, he was told, of killing the vermin, and cleansing the skin and wool. Of late it appeared that this practice consisted in dipping the sheep in a mixture prepared for the purpose, in which the sheep, with the exception of the head, were immersed. It was done with great rapidity, and in the process there were two men employed to wring the mixture out of the wool, and let it drop down into a vessel. In this case they would find that instead of one set of dippers, there were two sets of dippers, so that the sheep, having been dipped by two shepherds, passed to two other men, who drained them as far as possible, and after standing in a shed for a considerable time, they were taken back to their respective fields. The dipping itself was done by the two shepherds—the head shepherd and the under shepherd; the head one being a most experienced man, and the under one also well qualified to do the work. Now, in the month of August, 1858, there being at that time about 869 sheep, some of which were sent from the other farm. Mr. Brown, the plaintiff's son-in-law, was the manager on the farm—Mr. Black going from time to time simply to see how matters were conducted. Mr. Brown spoke to Mr. Black about getting proper materials for having the sheep dipped early in August, that being the usual time. Mr. Black undertook to give the order for the stuff that was to be used; and having seen advertisements in the Berwick papers, he proceeded to the shop of the defendant, Mr. Elliott, who was a chemist and druggist in Berwick-on-Tweed. He asked for Mr. Elliott. He was told that Mr. Elliott was not at home; but one of the young men who attended to his business was there, and he took the order. Mr. Black told him he wanted some stuff for dipping sheep, and the young man said they could furnish it; they professed, in fact, to sell a superior dipping mixture. Mr. Black, perfectly unconscious of the ingredients, and not, of course, for a moment taking upon himself to give any specific order as to how the stuff should be composed, he told him that he wanted stuff to dip about thirty-five score of sheep. That, they knew, would be 700. The young man said that fourteen packages would be required for that. Mr. Black said there might be some other sheep sent—they might have a few more to dip—and he had therefore better

send fifteen packets. Some conversation then took place. It seemed that soft soap was used in dipping, and Mr. Black said "You will have to send me some soft soap," or something of that kind. The young man said the quantity required would be two casks, at all events he would send the proper quantity; so that the order was given for the fifteen packages and the proper quantity of soft soap. The address was given to be left at the Lockhart Station. Mr. Black having given the order, went home to New Heaton; and shortly afterwards he did get fifteen packages, each labelled in the way he had mentioned. Each package had upon it the directions how it was to be used. It was headed—"Superior bath for sheep, prepared by J. Elliott, chemist and druggist, Hyde Hill, Berwick. Pour upon each packet 3 or 4 gallons of boiling water, and stir well for the space of ten minutes; add about 45 gallons of cold water, and dissolve in the mixture 4lb. of soft soap. The preparation will then be completed, and the quantity sufficient to dip 50 hogs." Then the direction proceeded—"The mixture must be put into a tub or other vessel sufficiently large to allow the sheep (except the head) to be immersed in it, without running over. When the sheep is taken out, it must be placed in another vessel, and the liquid pressed from the wool and returned again into the dipping vessel." Now, of course, that was an important document in the cause, because they had it there in print, so that there could be no mistake about the directions given by the defendant himself as to the way in which, and the quantity in which, that mixture was to be applied. Now, the order was given on the 7th of August. On the Saturday following, everything having been prepared for the operation of dipping, that operation was performed—on the 14th of August. They did follow the directions most scrupulously, with—if he might call it so—the exception that they added more water, so that it might weaken the mixture instead of strengthening it; and therefore that exception—if it might be called so—could have no effect upon the parties who so used it. The sheep that were dipped consisted of, as he had told them, 869, and only fourteen of the packages were used; so that instead of anything being in excess, everything was the reverse; in one word, he might say that those directions were complied with. The sheep were brought from considerable distances to the sheds, and they were turned back into the sheds at intervals during the day, and all appeared to have gone on well. Nothing, he believed, occurred on Sunday; but on Monday, in the afternoon, the shepherd found one of the sheep dead. That was the first thing that attracted his attention. He took it home. He went back and found several more dead. The symptoms appeared to be staggering, giddiness, and sickness, and then becoming faint and lying down, and very soon dying. The skin, soon after death, about the underparts, became blue and discoloured; and there could be no doubt that these sheep died from poison. They continued dying on the Tuesday in large numbers, and a message was sent to Mr. Elliott, the defendant, informing him what was going on. He was from home. Some communication had been made to him from Berwick, and on the Wednesday after he arrived, between three and four o'clock. He believed that no less than about 650 sheep had then died—all attacked by the same symptoms, and most of them dying in the order in which they were dipped. That was the scene Mr. Elliott witnessed when he arrived. Mr. Brown had a great deal of conversation with him. He was of course exceedingly depressed about it. It was a fearful calamity for him, and so it was under any circumstances to the defendant. The defendant told Mr. Brown that he was satisfied that those sheep had died owing to the

mixture being too strong, and seemed to lament bitterly the occurrence. He stated that he had received some composition stuff from a person with whom he did not usually deal. When he saw his men using it he did not like it, and he returned that cask and got another. After they had been using that he did not like it either, and he ordered it to be returned. Mr. Elliott examined the sheep, and said it was no use going further; it was perfectly plain the sheep had been poisoned. The skins, it appeared, were sold to a skinner at 2s. each, and the carcasses were buried. There had thus, said Mr. Manisty, been the cause, and there was also the effect.

The following evidence was then called :

James Black—I am the plaintiff in this action. I am a farmer living at New Heaton, which is a large farm. My son-in-law keeps a farm at Burton, near the Lucker Station. It is a farm of about 1000 acres. In 1858 Mr. Brown's stock was sold. I arranged to continue the lease, and purchased some of his stock of sheep. I bought a dipping bath. I still continue to live at New Heaton, Mr. Brown managing the farm. The sheep were very fine ones. Sheep are generally dipped before harvest. I had been recommended to purchase some sheep-dipping mixture. I had seen an advertisement in the *Berwick Advertiser* of a sheep-dipping mixture. [Advertisement of defendant read.] On Saturday, 7th August, I went to the shop of Mr. Elliott, who is a chemist and druggist at Berwick. I was told that Mr. Elliott was from home. I saw a young man in the shop, and told him I wanted some mixture for dipping forty-five score of sheep. He said fourteen packages would be sufficient. I said he had better send some more, for fear there was some more sheep. He said he would. I said he would know the quantity of soft soap needed, and he was to send it. I gave no order for naphtha: it was mentioned. No price was mentioned. I gave the young man the address, to send it to the Lucker Station for me. I was not aware of the ingredients. On the 17th August I went to Berwick by railway. At the Lucker Station I met my son-in-law. About 400 sheep were then dead. I went to look at the sheep with my son-in-law. We also went to Mr. Elliott's. He was from home. I told the young man what had happened, and requested Mr. Elliott to be sent for. On the following morning I sent my son George to Burton; he returned on Wednesday. I was at the Cornhill Station to meet him. He gave me a package. It was in a paper like this—[produced one of Mr. Elliott's labels]. My son had the carcase of a sheep in a large tub. I took it to Edinburgh, and arrived there the same evening. I put it in an enclosed place, and locked it up. I went to Professor Dick, a veterinary surgeon, and in the morning the sheep was taken to a dissecting room. Dr. Thompson was also there. I returned home, and on the following Saturday, the 21st, I called upon Mr. Elliott. I told him of my loss, and laid before him a statement of it. He said it was a bad job. 850 sheep died altogether: the value of them was £1737.

Cross-examined—I have been a farmer for many years, and always dip sheep; I have always had them dipped every year for many years past. The object was to clean the skin of tick, lice, and such like. I suppose these washes contain dangerous ingredients. I believe it is known among farmers. I have heard they contain arsenic, more or less. I do not know how many gallons the washing tub will contain. I understood Mr. Elliott to say he would not pay, and that other people had used the same powders, and that nothing had happened. I think he mentioned Mr. Crow who had used the wash the same day. He did

not say he had a package left, and would take twenty-five sheep and have them bathed, and would stand or fall by the result.

Re-examined—I did not attend the dipping at Burton. Tate, the shepherd, and Tate, the under-shepherd, are experienced men. I have seen the dipping-tub and the drainers, and they are better than usual. There were two sets of drainers.

Cross-examined—Defendant was very much excited when he saw the sheep dying in the field. He said he was afraid they had died from the bath, and that the arsenic must have been taken from a damp cask. The stomachs of two of the sheep were taken away by Mr. Dunn. An ox and five horses died about the same time as the sheep. They had been feeding on the farm. Some fowls also died.

James Elliott—I occupy a farm of more than 1000 acres at Lamber-ton, near Berwick. I have had a knowledge for some time of sheep and sheep-dipping. The stock on the Burton farm was of first-rate quality. I was with Mr. Black at Mr. Elliott's shop about the value of the sheep. Nothing was said by Mr. Elliott about getting twenty-five sheep and dipping them with the same material.

Cross-examined—I have dipped 500 or 600 in a day, between six in the morning and six at night.

Thomas Brown—I married Mr. Black's daughter. I have been five years at Burton. Robert Tate was my head shepherd. He has been sixteen years in my service. I have a regular sheep-dipping machine, which I have used for five years. The sheep were brought in lots from the different fields. The dipping commenced at six o'clock in the morning, and finished about six in the evening. The number dipped was 869. Mr. Black had sent from New Heaton sixty gimmers, which were dipped last. Double the quantity of water was put to the mixture to dip the sixty. In a field called the Broad Rigs were a large number of sheep: seven were not dipped. Four lambs which were brought to the dipping, but were not dipped, and went back to the field with the sheep, are living. There was a gimmer in the field. I think it was taken to the dipping. It continued in the field until sold to a butcher, not a month after. It had become "sturdy." Two old tups in the field were not dipped, and are living still. With the exception of these seven and a lamb, all died out of the field. Of the sixty gimmers that were dipped, eighteen survived till lately, when one more died. Fourteen out of the fifteen packages were used. It was a very fine day when the sheep were dipped; it rained a little toward midnight. I never had any deaths from dipping before. On the Sunday there were no symptoms of anything wrong among the sheep. They were a healthy flock. They began to die on the Monday. They had a shaking of the head and frothing at the mouth. After death the body was swollen, and the skin black and blue. Mr. Bird, veterinary surgeon, was sent for; he said he could do nothing for them. I sent for Mr. Elliott. He came on Wednesday. I told him what had happened. He said he had got a cask of arsenic of a person he had no previous dealings with, and that after using it so far down he found it damp and discoloured. He gave over using it, and ordered another cask of the same person, and after using it so far, it was damp like the other, and he discontinued using it, and commenced using one that had been standing in the warehouse. He said he had no doubt the sheep had died from the composition, and that he was liable for the costs. The shepherd took him to Crawlard, where a man made him an offer for the carcases. The man would not buy them till he saw one of them cut up. He cut one up; the tallow was quite soft, and its inside very

much discoloured. The railway company refused to convey the carcasses. Ormston, a skinner, came into the field, and bought the skins of Mr. Elliott for 2s. each. On leaving Mr. Elliott at the railway station, he said I was to tell Mr. Black to make out an estimate of the loss, and call on him on Saturday. Mr. George Black took away a carcass and the remaining package to Edinbro'. The sheep continued to die till the middle of September. A donkey belonging to the shepherd, who brought home some of the carcasses on its back, died a few days after the dipping. It had a bruise on its back.

Robert Tate, senior—I am a shepherd, and have been all my life. Have been sixteen years come May with Mr. Brown, and during that time I have had charge of dipping the sheep every year. Had no misfortune till this year. I had used the same dipping machine for some years. The sheep were very fine; before we began dipping, we had the curtains cleaned out and bedding put in. None of the sheep got their heads into the dip. Ann Strachan attended to the boiling water. I put in each package, and she stirred it. I put in fourteen out of the fifteen packages. There was a small tub in which we first dissolved the mixture. I put between three and four gallons to each package. After the water and powder were in, the soft soap was put in. Four pounds of soap to each packet were used. I weighed the soap myself. Forty-five gallons of cold water were put into the dipping-tub. Was present at each of the fourteen mixings. With the last lot upwards of 100 gallons of cold water were put in to wash the sixty sheep that had been washed before. The sheep were brought from nine fields to be dipped. One hundred and sixty-three lambs were brought from the marsh lands; all are dead. We generally call a lamb a hog about the back end of the harvest. Those were the first dipped. Seventy lambs were brought from the Reapers' Hill; all are dead but one, and it has a sore leg. This was the second lot dipped. Seventy-one were brought from Broad Rigs—partly hogs and partly old sheep; all these are dead. In Broad Rigs there were seven lambs that were not dipped: they were sent back with the others, and are living. One was a gimmer: she was left in the field, and has been sold to a butcher in Bamburgh; she had the scurvy. There were two tups also among them: they are alive. Sixty-eight sheep from Herton were brought from little Crawlaw: they have all died. They went back to Golden Hill pasture. Ninety-seven ewes were brought from the Moss Close: they are all dead. They had to be driven upwards of a mile along a road from where they were dipped to the pasture, Moss Close. Sixty-nine ewes were brought from Crawlaw: all are dead. Fifty were brought from the West Moor: all are dead. All the lots went back in rotation. Seventy-eight gimmers and ewes were brought from Far Lee, and forty-three Dinmonts from Golden Hill: all these are dead. When they left the curtains they did not appear to be dripping. Sheep are particular in not eating grass that has a bad smell: they are very nice. They would not eat grass on which there were soft soap, sulphur, and soda. I was among the sheep on Sunday, and found nothing wrong. On the Monday I found a ewe lamb dead. They died rapidly from the Monday. The ewe lambs began to die first; they were the first dipped. Mr. Bird, veterinary surgeon, came on the Tuesday morning, and I cut up some of the sheep for inspection. When the sheep began to be ill they appeared to be sick; there was heavy breathing, swelling in the head, red eyes, and frothing at the mouth. The wool became very loose when they were dressed, and the skin was black and blue. On the Wednesday Mr. Elliott came I showed him a lot of the dead sheep. I

met him at the cart-shed. He said, "It's an awful job, shepherd." He asked if they had been long in the dip. I said I would give him the numbers we had done in the day, and he could judge whether they were long in the dip or not. I also offered to show him the things we used at the dip. He said it was of no use; the bath had spoken too truly for itself. In the Craw Lea a man wanted to buy the carcasses. Mr. Elliott said he would sell the carcasses, and asked what he would give. I lent the man a knife, and he opened a sheep. He asked for time to go to the railway station, and he would give an answer. The carcasses were not sold, and Mr. Elliott directed them to be buried. Frank Ormston, the skinner, came and bought the skins for 2s. a piece. One of the drainers got a bad arm; my finger and thumb were afterwards black, with a little discharge. Consulted Mr. Broadbent, surgeon. I was sick, and not right for several days. The under shepherd's hands were also affected, so were others. I do not know what became of the remainder of the mixture after the last dipping. I do not know whether it was thrown over the fields.

Robert Tate—I was under shepherd at Mr. Brown's sheep-dipping last year. Robert Tate has given a correct account of the way in which the dipping was done. My finger and thumb and head and chest were sore.

Cross-examined—My thumb had no scratch on it before. The donkey pastured close to where the dipping took place.

Ann Strachan corroborated the evidence of the shepherd.

Wm. Bird—Am a veterinary surgeon at Belford. On the 14th August I happened to be at Mr. Brown's, from 11 o'clock in the morning till 4 in the afternoon. Saw the sheep-dipping. I had never seen two sets of drainers. I looked on at them dipping the sheep for about two hours. I noticed the packages used by the shepherd; they were not all the same size. I went to Burton on the following Tuesday, and five or six score of dead sheep were shown to me in the cart-shed. I saw some die. Those that had the disease had a frothy mucus about the brow, nose, and mouth, the eye was very dull, an evident pain in the bowels, the breathing was most laborious, the head was swollen and thrown back. The urinary discharge was black and bloody. The skin was of a black and blue appearance, and the wool falling off in large patches, particularly on the back and across the loins. All the symptoms I have described are consistent with poisoning by mineral poisons. Opened twelve of the carcasses. Did not find the stomach inflamed, but the small intestines were. The liver was black, soft, and easily broke up. The spleen was congested. The bladder was empty. The lungs, in all cases but one, were inflamed. The application of soda and soft soap to the skin would render it more capable of absorption. I used no means to stop the disease. I found sheep apparently well, ruminating and eating, and dead in twenty minutes afterwards. About three or four days afterwards I saw the donkey. He appeared to have the same appearance with regard to swelling and blueness on the flanks. There was a wound on the back. On the 23d August I was called in to look to a two-year-old steer; it was dead; the immediate cause of death was inflammation of the bowels, assisted by chronic disease in the lungs. The symptoms were not the same as the sheep. On the 31st August I was called in to see a dead horse and another steer. Neither of these had the symptoms of the sheep. I afterwards saw other animals, none of which had died of the same symptoms as the sheep. Had I not known the previous history of the sheep, I would not have known what to think of the results. I have seen a case of

poisoning in a dog by application to the skin. I applied twice corrosive sublimate to the spots on a mangy dog, and he died the second day. Four grains of corrosive sublimate will kill a dog. I left it on the skin. It has a horrible taste. I left the dog to lick his sores. I don't think he would lick them. I rubbed it on. I have poisoned dogs by prussic acid, by giving it through the mouth. I don't know that mineral poisons are more difficult to absorb than volatile vegetable poisons. I believe arsenic and corrosive sublimate are more easily absorbed than vegetable poisons. If there was a very large surface, when there was absorption I would expect the quantity absorbed to be large. I have had no case of poisoning by arsenic except this.

Matthew Spence, a drainer, and *William Mark*, another drainer, gave evidence corroborative of the shepherd's testimony.

Thomas Hunt—I farm between 700 and 800 acres at Thornington. Last August we dipped 1083 sheep in a day. None died.

Cross-examined—The wash is known as poison.

Michael Fellon, *John Miller*, and *James Mason*, described the dipping.

Frank Ormston—I deal in skins. On Wednesday, the 18th August, saw Mr. Elliott at Burton, and agreed to give 2s. a piece for each skin. I could not get the skins off all.

Cross-examined—I went to pay for the skins, and Mr. Elliott would not take it. I have it yet. Neither Mr. Black nor his shepherd would have it. Elliott asked me, in the presence of Tate and Black, "What will you give for the skins." I said 1s. 8d. He did not say if it was proved his powders had killed the sheep he would do his best. Mr. Elliott was very much troubled.

Alexander Davison, shepherd to Mr. Turnbull, of Budale—I saw this dipping going on. They were very careful. I would not have taken so much pains as they did with the dipping. The dipping-machine was a very good one. Sheep are very nice in their feeding. If this mixture were on the grass they would not eat it. I have lost sheep. I did not blame these powders. I have had them dead in the field next morning.

Re-examined—I have used Wilson's (Coldstream) powders for the last three years.

Mr. Lewis George Broadbent—I am a member of the Royal College of Surgeons, and practice at Bamburgh, about a mile and a half from Burton. On 23d August I was called in to see Robert Tate, the head shepherd. I found on his finger and thumb the cuticle from advanced inflammation separated: they were almost black, livid, and the cuticle separated from the true skin. There was slough, which came away with the nails. I called in on the 25th to attend Matthew Spence; his right arm was in an advanced state of inflammation. The cuticle was raised from the true skin; there was a large blue patch about the size of half-a-crown just above the wrist. There was another large patch about the size of your hand in front of the elbow. It also was dead and gradually sloughed off. The symptoms were consistent with arsenical poisoning.

Cross-examined—If a healthy human skin were exposed for twelve hours to the liquid, or for six hours, absorption of the arsenic would take place. I have not known such an absorption.

Mrs. Brown, the daughter of plaintiff, having been examined, the Court adjourned till Monday morning.

MONDAY, Feb. 28.

The Court re-assembled this morning, his Lordship taking his seat on the Bench at ten o'clock.

The investigation of the case was resumed by the evidence for the plaintiff being continued.

Professor Dick, of Edinburgh, examined by Mr. Davison, deposed—I am professor of the Veterinary College of Surgeons in Edinburgh, and have had considerable experience in the treatment of the diseases of animals. I remember the plaintiff calling on me on the 19th of August last in the evening. On the following morning two of my men went with the plaintiff and returned with the carcase of a sheep to my dissecting room. The tup was opened in my presence. I sent to Professor Wilson and Dr. Murray Thompson. Professor Wilson's assistant came to my dissecting room. I gave Dr. Thompson certain organs of the sheep—part of the skin, stomachs, the liver, the spleen, and a portion of the intestines and kidneys. He took those away with him. I myself examined the carcase of the sheep minutely, and formed an opinion as to the cause of death. Poison, in my opinion, was the cause of death in that sheep. I believe it was arsenic. It is scarcely possible to say in what way it was taken in; but my judgment was that it was absorbed by the skin. Assuming the mixture, of which I have heard the analysis, to be applied in the way I have heard it was applied, I am decidedly of opinion that the quantity of arsenic in the mixture was the cause of death, absorbed by the skin. The mixture applied with the arsenic and soft soap and soda, would materially assist in the process of absorption.

Cross-examined by *Mr. Atherton*, and interrogated—Has it ever occurred to you on any previous occasion to examine any animal in which arsenic was discovered, sufficient to account for death? Witness—Yes, both sheep and oxen. The sheep which I have examined have been comparatively few, and have been sent me by old pupils from different parts of the country. I have never had a case in which I came to the conclusion that the arsenic had been taken in by the mouth. Supposing the sheep in question had been submitted to my examination, and no account whatever had been given to me of the history of the sheep, I would have been able to form this judgment: that, unless the arsenic had been poured over the throat, it must have been absorbed by the skin. Supposing the arsenic to have been in this case forced over their throats, I would expect to find the same indications, because the same appearances would take place, whether the arsenic was absorbed by the skin and got into circulation, or whether it was taken in by the mouth.

Re-examined—From my experience and knowledge of sheep, they would not eat grass seasoned with poison; they are delicate animals, both in their taste and smell.

Dr. Murray Thompson—I reside in Edinburgh, and assist Professor Wilson. I received the package spoken to from Mr. Black, and also some of the organs of the sheep spoken to by Professor Dick. I analysed the contents of the package. I found arsenic to the extent of 45·82 per cent., and 2 lbs 10 oz. was the weight of the package. I have heard how that mixture was directed to be used. In my judgment, it was a very dangerous mixture. Having regard to the different ingredients, that mixture was very likely to be absorbed by the skin. Six grains passing into the blood would prove fatal to the sheep. Assuming that mixture to be as represented by the defendant, and applied in the way described, 195 grains of arsenic would be absorbed by each sheep. I analysed the different organs. In the liver it was not very abundant, but distinct enough. The skin gave trace of arsenic. The second stomach also gave trace, but much smaller than the inner. The other

organs—the spleen, &c.—did not. Assuming arsenic to have got into the blood, the results were consistent with that.

By Mr. Atherton—I have studied chemistry nine years, and have been with Professor Wilson 3 years and some months. I have principally been engaged in analysing. Previous to that I was assistant-superintendent in a chemical manufactory. I never examined sheep before. Their skins are less likely to absorb arsenic than those of human beings. Sheep-washes containing arsenic, and in as large proportions, have been used with impunity, but not without risk. Arsenic is a very capricious poison. It sometimes may be used and does not produce poisonous effects, and other times it will under the same circumstances. I do not know to what to attribute that. I think if poison had been taken by the throat, it would have been found in the stomach, but I should consider it very unlikely to have passed through the mouth. I found arsenic in the second stomach, but had it passed through the mouth it would have been found in large quantities. I found food in the stomach. There were no traces of arsenic in the contents, but in the walls of the stomach it was traceable. I applied Reinsch's test. I examined only two stomachs, the first and second. I found no traces of arsenic in the paunch. The fourth, an analogue to the human stomach, I did not examine. From the indications I saw it is not impossible, but highly improbable, that the arsenic might have passed through the throat.

Re-examined—I was about four years in the laboratory of Professor Anderson. I was also assistant to Dr. M'Laggan.

Professor Wilson, examined by Mr. Manisty, deposed—I am professor of technology, another name for industrial science. I have given my attention to chemistry. I have the ingredients of which this mixture was composed. I think it was dangerous. Having regard to the ingredients, there was a great risk of the arsenic being absorbed. My opinion is, that six grains absorbed into the blood, is sufficient to kill a sheep. Assuming the result of the analysis to be as stated, and taking the materials in the whole case into account, arsenic absorbed into the system was the cause of death.

By Mr. Overend—I have understood that this kind of mixture is used by farmers, and with impunity.

This closed the case for the plaintiff, and the investigation was proceeded with in behalf of

THE DEFENCE.

Some conversation took place with regard to the matter of the contract, which resulted in the decision, by his lordship, that the manufacturer must warrant whatever he professes to make.

Mr. Atherton, in introducing the case for the defence, joined in the observations made by Mr. Manisty as to its importance, both as regarded the public and his client, the defendant in the action. The defendant, he said, was a person somewhere about 40 years of age. He had been engaged in the business of a chemist and druggist in the town of Berwick-upon-Tweed for about 14 or 15 years. He had carried on that business with industry and skill and credit; and to this was attributable the fact that he was to some extent, having regard to the nature and extent of the business, a wealthier man than when he began his career. He did not seek to appeal to the feelings of the jury on behalf of his client in this case. He was content to rest the case on the evidence which would be adduced before them, contrasted to some extent with the evidence already laid before them on the part of the

plaintiff. He thought he might at the outset allude to an observation in which they would fully concur, and which he was sure would not be permitted to bias their minds against the defendant. He alluded to the wholesale destruction of animal life, which was in evidence before them, and which was the foundation of this inquiry. It was so wholesale a destruction of animal life that one could not hear the narrative of it without a certain shock to the feelings; and that shock might, unless the judgment be guarded by those who had to determine between the plaintiff and defendant, have a tendency to disturb the feelings, and to bring the judgment to a conclusion that would not be well founded on the facts. The question being what caused these numerous deaths, and it lying upon the plaintiff to satisfy them beyond a reasonable doubt that it was a breach of contract on the part of the defendant that led to the calamitous result, he should ask them, and not in vain, to apply their minds earnestly and dispassionately to the consideration of the evidence, and not to assume that because the sheep died in these numbers, and died recently after the application of this wash, the defendant was responsible, and that the plaintiff was entitled to their verdict. His learned friend had put his case very ingeniously; but he (Mr. Atherton) thought a fallacy lurked in his proposition. He was inclined to decry the application of science, and, as it seemed to him, the evidence of scientific men to the elucidation of the facts of this case. He thought they would be of opinion, when the evidence as he (Mr. Atherton) would venture to open it should be before them, that the sort of shadowy or *primâ facie* case which might be made out in the way his learned friend had presented it, had been entirely answered, and that it was impossible, without shutting their eyes to facts which would admit of no doubt, to arrive at a conclusion that the plaintiff had done that which he was bound to do, made it clear, beyond a reasonable doubt, that the calamity which undoubtedly had taken place was attributable to breach of contract on the part of the defendant. Let them then consider, which was a very important matter, what the bargain or contract was, propounded by the plaintiff himself, and of the breach of which he complained. He would take it in the terms in which it was stated on behalf of the plaintiff, that the sheep-dipping composition was not reasonably fit and proper for the purpose of dipping sheep, if used according to the printed directions. This was of great importance, and could not receive too much attention at their hands in dealing with this contract as a matter of bargain. They would observe that the defendant, Mr. Elliott, did not assume—nor was it comprehended—that he took upon himself the character of absolute warrantor or insurer. He did not say that in the use of his sheep-wash, used according to the directions, there was no danger. What he promised or undertook was that the ingredients compounded and used according to the printed instructions were “reasonable”—that was to say, under ordinary conditions and in a general way—for the use to which the defendant contemplated they would be turned. The purchase of these powders took place on the 7th of August, last year; and his learned friend would not deny that the contract—whatever it ought to have been—was then and there, at that very instant of time, complete. They would hear the extent to which for years these powders had been used precisely according to those printed directions, without the smallest injury to a single sheep, the defendant having compounded and vended these very powders for the last ten or a dozen years. They had heard one of the purchasers of those very powders—a person of the name of Davidson—called on the part of the plaintiff, and he would

prove that they had been applied, and applied with impunity, in the course of four years, to no less a number than 68,000 sheep, to which they must add the sale of six years preceding. He would call before them persons who had used those powders, and who made no complaints whatever as to results; and he thought it was exceedingly improbable that after the occurrence of this event other persons who had purchased those powders had been quiet and urged no complaint. He did not know whether it was that Dr. Dick had stronger nerves, but Dr. Thompson and Dr. Wilson seemed to be disposed to regard them *à priori*, with great terror and trepidation. Dr. Thompson thought by possibility a sheep might get through the wash and survive; but he would call before them gentlemen of skill and of eminence, who would test the application of those powders, and show the uninjurious results of their application. If the sheep had died of arsenic, it must have been taken into the body through the throat, and lodged in the stomach as food, and not in the way which had been suggested and entirely adopted on the other side—absorption, meaning penetration through the outer skin. Examination had been instituted, and it had been found that the mixture of arsenic would be and had been easily and without repugnance taken up, nibbled at, and swallowed by sheep. Having adverted to several other points of the defence, he, in conclusion, again adverted to the extreme importance of the case, which he was sure would receive, as it had hitherto done, the closest and most careful attention of the jury. He was satisfied to leave the interests of his client in their hands; and in the end, he had no doubt, they would arrive at a conclusion which would do justice between the parties, and which would certainly not visit his client with so heavy a verdict as that which must follow if the plaintiff obtained their verdict, after a clear and satisfactory proof that that had happened with reference to the plaintiff's sheep on the 14th of August which had never happened with reference to a single sheep of the hundreds of thousands which had been previously subjected to the same application, and which did not happen to any one of those other sheep to which the other powders of the same mixture were subsequently applied.

Philips Spencer, the first witness for the defence—I am a wholesale chemist in Newcastle. In the year 1856 I supplied Mr. Elliott with three casks of arsenic. They were of the common commercial quality.

By Mr. Manisty—I never tested the strength of the arsenic. I am not aware that there is a great deal of adulteration in the arsenic before it reaches my hands.

John Elliott, chemist and druggist in Berwick, the defendant in the action, deposed—I served an apprenticeship in the county of Mid-Lothian. I started business on my own account in Berwick-on-Tweed, in 1844. Since then I have been in the habit of preparing and selling powders for washing sheep. My preparation consists of $1\frac{1}{4}$ lb. of arsenic, $1\frac{1}{4}$ lb. of soda ash, and 2 oz. of sulphur. In 1856 I sold 501 packages for 25,000 sheep; in 1857, 503 packages for 25,090 sheep; and in 1858, 341 packages for 16,110 sheep. Before the last three years I had been in the habit of selling large quantities. During the last ten years I have not heard of the death of a single sheep arising from the use of my powders, nor has any complaint of any sort been made to me about them. Before the month of August last, the plaintiff had not bought any of my powders. On the 7th of August I ascertained that he had given an order towards the end of July. I ordered two of the apprentices, Meikle and Robertson, to make up powders sufficient for the sale on Saturday, that being the market day. Robertson

had been with me for four years past, and Meikle one year past in April. We had one cask of arsenic, which we got from Mr. Philips Spencer, of Newcastle, which I purchased in 1856. It was kept in a back wareroom. I kept my soda ash in the same room, as also the sulphur. I was not with the apprentices all the time they were preparing the powders. The soda ash and arsenic were exactly of the same weight. They were sent off according to Mr. Black's direction, on Wednesday, 18th August. I was travelling on the Newcastle and Berwick Railway. I left at Warkworth station, and one of my apprentices told me to stop at Lockhart station. I did so, and I there met Mr. Brown. I asked if it was true that 600 of his sheep had died. He said "Yes." I said it could not be possible, as I had never heard of a single accident resulting from the use of my powders. He said I would see when I got to the town. On getting there I asked the shepherd how he had done this. He said, "Just by using the bath according to your instructions." I went to where there was a dead sheep. It was opened by one or other of the men. I was very much confused and distressed about the matter. I said I could not account at all for the death of the sheep. On the way down to the house I mentioned the cask of damp arsenic which I had bought as being the only probable cause that I could see for the death. I stopped the young men from using it, not because I thought it would be deleterious, but because I thought it would be inert. Mr. Brown asked me as to the weight of my powder. Mr. Brown mentioned 2 lbs. 10 oz. or nearly so. I said that is the exact weight of my powder. I did not at that time mention what my powder was composed of. I said if Mr. Black would call on me on Saturday I should have more time to consider the matter and talk with him. After getting home I ascertained that the powders had been made out of Spencer's cask. I then sent round the country to ascertain the fate of the flocks to which the same powders had been applied. On the 20th of August I took one of the powders to Dr. M'Laggan, in Edinburgh. I came back the same day. On the next day, 21st August, the plaintiff and another gentleman came into my shop. I did not then know Mr. Black. I asked, "Are you Mr. Black?" He said he was. I said this was a dreadful calamity. He said it was. I said I had made a careful investigation into the matter, and that I had also sent word round the country to ascertain the fate of the sheep to whom the same powder had been applied. The result of that inquiry was, that all the other flocks bathed that week were well. I said to him, I distinctly denied the bath would produce the same effect as on his, if used according to the printed instructions. Mr. Black said the packet is in Edinburgh for analysis. I asked if he would give me a copy of the analysis, to which he made no reply. I then said, would he give me the stomach of one or two of the sheep. He said there was also a sheep in Edinburgh for the purpose of analysis. I said, if they had been bathed according to these instructions no injury would have happened. I said the probable cause of death was the paragraph which appeared in yesterday's paper, viz., that the sheep being turned out into the pasture in a wet state, the rain had washed the poison off the wool, and that the sheep by eating it off the grass had died.

By Mr. Manisty—I had three apprentices in August last—Robertson, Meikle, and Fitzgerald. The latter is under-assistant, and has nothing to do with the preparation of the powders. I do not myself mix the packages. I am not aware that the strength of arsenic, when it comes from the wholesale dealers, varies extremely; and dealing with respectable houses, we rely on it being of the same strength.

Chemists generally keep it secret how they compound their mixtures. I have been present at dippings of sheep. I know Mr. Wilson, of Coldstream. I had never a curiosity to know what his mixture is composed of. I have one of his packages, but I have not analysed it.

William Jenkinson—I am the shopman of Mr. Elliott. I was in Mr. Elliott's shop on the 1st of August, when Mr. Black came in. He was accompanied by Mr. Elliott. I was at the counter. I heard the conversation between them. [Witness corroborated the previous witness as to the conversation.]

George James Robertson—I am twenty years of age, and am apprentice to the defendant, Mr. Elliott. I went to him on the 26th February, 1855. I was not employed in mixing the powders in that year, but in the subsequent years I was. In July, 1858, I was employed with the other apprentice in making up the powders for that season. We made up far more than five dozen. The whole number was for fifty hogs each. I never heard of any injury to any sheep to whom the bath was applied.

William Meikle, William Elliott, junior apprentices, corroborated generally the statements of the previous witness.

Thomas Hardie—I am shepherd to Mr. Craw, of Scrimiston, near Berwick. I remember Saturday, the 14th August, dipping a number of my master's sheep. I got the powders from Mr. Elliott's shop. There were powders each for fifty sheep. I got them on Friday, the day before the dipping. I had powders for fifty sheep. I began to dip somewhere about seven o'clock in the morning. I dipped 413 or 417 sheep. I used eight of the powders, and I finished between five and six o'clock in the afternoon. No harm, to my knowledge, came to any of the sheep I dipped. Mr. Black sent for a part of the wash powder, which was not used, and Mr. Elliott got a part. I have been accustomed to dip sheep for a good many years. I have known men employed in dipping sheep put straw round their legs to protect them from the effects of the mixture.

David Turnbull—I am a farmer at Barmoor, and keep sheep. I have used Mr. Elliott's powders for two years. Last year I bathed 380 sheep with them. No harm came to the sheep so bathed. I was present when they were used, and I followed the directions.

Edward Currie, shepherd to Mr. John Lank, of Unthank, had been accustomed to sheep all his lifetime. He had used Mr. Elliott's powder ever since he commenced manufacturing them. No harm, to his knowledge, ever resulted from their use.

John Lumsden, shepherd to Mr. Laidler, Fenton Hall, had used Mr. Elliott's mixture. He had used it last year, about the 10th August. He bathed about 300. No harm resulted to the sheep.

William Nesbitt, in the employ of Mr. Gillie, of New East Farm, had attended during the last ten or twelve years to sheep-dipping. Mr. Elliott's sheep-bath had been used on the farm during the whole of that time. No harm ensued to the sheep. He used it last year, having dipped 225 sheep with it.

David Cooper, farmer, Westage, near Berwick, had also used Mr. Elliott's powders, and found no harm to result from their application.

A number of other witnesses were examined, who gave similar evidence as to Mr. Elliott's powder, and the uninjurious results which had followed from its use.

Mr. Gann, traveller to Mr. Elliott, went to Burton Farm, and took away two of the stomachs of the sheep. He also asked to take a few sods from the different fields. He got permission, and marked the sods

which he took up; they were put into a tin box. Black, who accompanied him, took charge of the sods and stomachs.

Robert Blaylock, butcher, Berwick, corroborated the evidence of the previous witness, stating, in addition, that he delivered the sods and stomachs to Dr. McLaggan, in Edinburgh.

Dr. McLaggan—I am a Doctor of Physic and Lecturer on Materia-Medica, in Edinburgh. I remember, on the 24th of August, receiving the chest containing two jars and a tin box. The smaller jar contained the intestinal canal of a sheep. I subjected it to analysis for the purpose of detecting arsenic. I used Reinsch's test. The paunch contained a large quantity of freshly-swallowed grass, and a minute trace of arsenic. The fourth, or true stomach, contained a very distinct portion of arsenious acid. I applied the test to the three last stomachs. There was a small amount of arsenic. I also examined the cæcum or *cul de sac*. There were in that about 2 oz. of fluid substance and a slight quantity of arsenic. Supposing I had known nothing of the history of the case my inference would have been that the arsenic was swallowed by the animal. It was the most natural way for it to get there. There are but two theories—one, that it was swallowed with the food, the other that arsenic had been applied some other way to the animal, absorbed into the blood, had passed with the blood to all the textures, and had then been poured out by the secretion of the intestines, and so mingled with the remains of the food they contained. I should certainly consider the former to have been the more probable theory. The arsenic which I found was present in the contents of the stomachs. I did not examine the coats. I also found in the tin box the four sods, which I examined for the purpose of ascertaining whether they contained arsenic. I applied the same test, and found that they all contained more or less arsenic. Sods Nos. 1 and 2 contained an abundant sublimate of arsenic, which gave a small and distinct arsenical substance; No. 3, a small sublimate, not so much as No. 2; and No. 4, a sublimate equal to No. 2. The arsenic existed in a soluble form. I examined a portion of a package which I got from Mr. Elliott. The constitution of the powder I found to be 3.21 per cent. of sulphur, 44.72 of arsenic, and 52.07 of soda. The general conclusion I would draw from the indications would be that the arsenic was taken in by the mouth. Arsenic, as a matter of science, can be absorbed by the skin; but it is not easily absorbed. Dampness would have a tendency to weaken the mixture.

Finlay Dunn—I am not connected with practical chemistry at present, but was so up to 1856. I am the author of a work entitled 'Veterinary Medicines,' &c. I have made, for the purpose of this inquiry, certain experiments on sheep with various sheep-dipping solutions. I wrote down the result. On Saturday, 19th Feb., I made a mixture exactly like Mr. Elliott's. I had 23 sheep brought up, and the whole I dipped in this solution. The sheep were turned into a yard, into which hay, loose straw, etc., had been removed. No mischief arose to the animals. Besides that I made another experiment, taking the same proportion of soda ash and sulphur, but half the quantity of water. I immersed four sheep in this solution, and again without injury. I made a third experiment, taking 10 oz. of arsenic, 10 oz. of soda ash, 1 oz. of sulphur, and 2 lbs. of soft soap. I dissolved these in six gallons of water. In that I dipped four sheep. I also got one of the sheep that had been previously dipped, and kept it in 65 seconds. I consider Mr. Elliott's powder perfectly safe.

John Gamgee, Member of the Royal College of Veterinary Surgeons,

London, and Lecturer on Veterinary Medicine in the New Veterinary College, Edinburgh, deposed—I have made some experiments on sheep. On the 10th of January, this year, I made experiment No. 1. I used $1\frac{1}{4}$ lb. of arsenic, $1\frac{1}{4}$ lb. of soda, and 2 oz. of sulphur. In this solution I immersed two sheep. They were in no way injured by that experiment. They are well now. I watched them up to last Wednesday. Experiment No. 2 was made on the 15th. I used one of the packets that I received from Mr. Elliott's shopman. I used from 37 to 38 gallons of water. I dipped in that solution four sheep. I used three healthy sheep. The fourth was badly affected with scab. The three sound sheep were immersed five minutes each. The other was in half an hour. No harm came to those sheep; on the contrary, the unsound one was cured. On the 25th January I made a third experiment, using 3 lbs. of arsenic, 3 lbs. of soda ash, 4 oz. of sulphur, and 4 lbs. of soft soap. About 37 or 38 gallons were used in this solution. I put into the solution six black-faced sheep. They were not altogether sound. One was affected with scab, and another with foot-rot, in which the vascular tissue was exposed. The healthy ones remained in five minutes each, and the other two half an hour. No injurious results followed; on the contrary, the scabby one was cured, and the other one considerably improved. In experiment No. 4, I used $\frac{1}{2}$ lb. of arsenic, $\frac{1}{2}$ lb. soda ash, without sulphur or soap. Four sheep were immersed in this—two for five minutes and two for half an hour each. The result in this case was also uninjurious. Experiment No. 5 I made with Dr. McAdam on 21st February, using $1\frac{1}{2}$ lb. of arsenic, 8 oz. of soda ash, 2 oz. of sulphur, and 4 lbs. of soft soap. I am author of the 'Veterinarian's Vade Mecum,' published in 1858. I have recommended baths for sheep as strong as Mr. Elliott's, as safe and proper baths. I made an experiment to ascertain whether sheep would eat matter saturated in arsenic. A dipping mixture was prepared according to Mr. Elliott's prescription, in which I aided in dipping two sheep—the head shepherd holding the head, and I pressing the liquid out of the wool. The two sheep were placed in a covered shed separated from other two that had not been dipped. One oat sheaf and four quarts of oats were saturated in that solution. The oat sheaf was placed in a tent, containing the two dipped sheep. The sheep were left there all night. I have seen those sheep this morning, and they present symptoms of the introduction of arsenic into the system.

Cross-examined by Mr. Manisty—Arsenic may be absorbed by the mucous membranes and also by the skin; but in such minute proportions that I could steep a sheep for a whole day and not kill it. I never examined any of the organs of a sheep that died from poison.

Dr. Stephenson McAdam, Edinburgh—In the month of February I analysed one of Mr. Elliott's powders, which I received from Mr. Gamgee. I found it contained arsenic, soda ash, and sulphur. The proportion of arsenic was 20·8-100 oz., and the weight of the whole was 44 oz. On the 21st of February I went to Dean Farm, near Edinburgh, and assisted Mr. Gamgee in preparing a dipping-mixture. We compounded $1\frac{1}{2}$ lb. of arsenic, 8 oz. of soda ash, and 2 oz. of sulphur, and into that two sheep were dipped. I have seen those sheep since, and they seemed perfectly well, so far as I could see. I purchased the materials. I got the arsenic from Mr. Elliott, druggist, in Pilgrim Street, Newcastle.

Henry Wilkinson, veterinary surgeon in Newcastle, deposed—On the 26th instant I made some experiments for the purpose of ascertaining whether sheep would eat food impregnated with Mr. Elliott's powder.

I spread the solution over the part of a field. I chose a piece of ground 24 yards by 23 yards, nearly square, and a piece of ground 23 yards by 3 yards. I carefully sprinkled one quart of the solution. There were four sheep left. They had their option of other pasture, and they ate indiscriminately of either. Of the four sheep, two had been dipped and two had not. I consider that they are suffering from the effects of having taken arsenic, and one of them is very likely to die.

This having concluded the evidence for the defence,

Mr. Atherton addressed the jury on the features which, to his mind, it presented. They had now, he said, heard the defence which he had been instructed to present before them; and he thought he might appeal to them very confidently, whether, to the very letter, the defence which he had been instructed to make and to open to them had not been established in proof. With respect, indeed, to a great and, perhaps, most material part of the circumstances constituting that defence, he was entirely at a loss to understand the course his learned friend wished. He would allude particularly, however, to the proof which had been given by many persons for many years of the use of this identical composition, without mischief. That composition had been applied to upwards of 100,000 sheep without a single casualty. They had also established proof, most complete and distinct, of a similar application, with similar results, by various persons, of the other portions of the composition that was made in 1858, in addition to the fifteen powders made and sold to the plaintiff. The learned counsel also remarked that the plaintiff's servants in this case appeared to have been inexperienced in the use of this kind of wash; and to this he attributed, in a great measure, the fatal results which followed.

Mr. Manisty replied—He would not repeat the observations he made in opening the case on Saturday morning, as to its importance in the three respects which he then mentioned. Their verdict would either sanction the sending forth mixtures of this character with these directions, or it would intimate to the chemists who supplied them that they must give to the parties to whom they were supplied notice of the danger which they ran in their application, and accompany them with directions which inexperienced shepherds could use and act upon so as to avoid these fatal results. If they were of opinion that the directions in this case were substantially complied with, and were of opinion that nevertheless death ensued by the use of that mixture, he wanted to know what it was that they had not done which they ought to have done to entitle them to their verdict? If that mixture—be it what it might—was used according to the printed directions, and that he thought no man could for one moment doubt after the evidence, what was it, he had waited in vain to hear from his learned friend, that they had failed to do which they ought to have done? What was the real question raised? Not whether this was a “reasonably fit” mixture, but was it “reasonably fit” to be used according to the printed directions? If he used that mixture, and used it according to the printed directions, in the ordinary way in which farmers and shepherds would use it, and the results which had been spoken of to have followed, he contended that the mixture was not “reasonably fit” for the purpose for which it was prescribed; and that, therefore, the defendant was guilty of a breach of contract.

The learned judge, in summing up, adverted at some length and commented upon the more salient points in the evidence. In regard to the matter of compensation, which had not been the subject of inquiry during the investigation, he observed that although the damages were

laid at £1700, he thought, if the jury found for the plaintiff, £1400 would be sufficient to cover the loss. Having brought before them all the points of the evidence on which, to his judgment, it was necessary to comment, he said the matter was now ripe for their decision. That decision must be founded on whether this was a "reasonable, fit, and proper" composition to be used, according to the directions on the package, for dipping sheep. If they turned the matter over in their own minds, and thought that the result could not be reasonably attributed to any other cause than the improper composition applied on this occasion, then they ought to find their verdict for the plaintiff. But if the plaintiff had not made that out to their satisfaction, then they ought to return their verdict for the defendant. He left the case in their hands.

The jury, after retiring for about half-an-hour, unanimously returned a VERDICT FOR THE PLAINTIFF—Damages £1400.

The utmost interest and attention were sustained during the investigation of the whole of the case, and the court, shortly after nine o'clock, adjourned till this morning, at nine o'clock.—*The Daily Chronicle and Northern Counties Advertiser, and the Northern Daily Express.*

ARMY APPOINTMENTS.

VETERINARY MEDICAL DEPARTMENT.

Acting Veterinary Surgeon Joseph Dulley has been permitted to resign his appointment.—*London Gazette*, March 11th, 1859.

MISCELLANEA.

STATISTICS OF EGGS.

A curious statistical return has lately been made of the supply of eggs to England from France, by which it appears that the annual value of this export to this country exceeds that of wine. Even before the oïdium disease, the difference in value in favour of eggs amounted to 157,072 francs yearly. In 1815, there were imported into England from France, 1,300,915 kilogrammes of eggs; in 1856, 9,005,758 kilogrammes; and as each kilogramme is calculated to be equal to eighteen eggs, it follows that France furnishes England with nearly 200,000,000 of eggs annually.—*Athenæum.*

ERRATUM.

We regret that in the explanatory note inserted in our last number from E. N. Gabriel, Esq., relating to the omission in the Register of the names of three gentlemen who had graduated at the Examination held by the section of the Board of Examiners of the Royal College of Veterinary Surgeons for Scotland, the Christian name of Mr. *John* Dollar was printed *T.* Dollar.

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Communications and Cases.

PRESENTATION OF A TESTIMONIAL TO
ASSISTANT-PROFESSOR VARNELL, OF THE
ROYAL VETERINARY COLLEGE.

A FULL meeting of the students of the Royal Veterinary College was held on Thursday, the 24th March, in the theatre of that institution, to present to Professor Varnell a testimonial expressive of their esteem and gratitude. It consisted of a massive silver salver, a cruet-stand, and an elaborately chased cake-basket of elegant design. On the salver was engraved the coat of arms of the Royal College of Veterinary Surgeons, surmounted by their motto—"Vis unita fortior," and below was the following inscription:

"THIS SALVER, WITH CRUET-STAND AND CAKE-BASKET,

IS PRESENTED TO

PROFESSOR VARNELL,

BY THE

STUDENTS OF THE ROYAL VETERINARY COLLEGE,

AS A MARK OF THEIR ESTEEM, AND APPRECIATION OF THE KIND
AND EFFICIENT MANNER IN WHICH HE HAS UNIFORMLY

DISCHARGED HIS DUTIES TOWARDS THEM,

LONDON, SESSION 1858-9."

The entrance into the theatre of Professor Varnell, accompanied by his colleagues, Professors Spooner, Simonds, and Morton, and Mr. Demonstrator Corby, was the cause of a universal burst of enthusiastic greeting. When the applause

had subsided, the chairman of the meeting, Mr. J. J. Cheesman, upon whom devolved the honour of presentation on behalf of his fellow students, addressed the assembly as follows :

GENTLEMEN,—As you are aware, the object of our meeting here to-night is the presentation of a testimonial to our much respected tutor, Professor Varnell, in grateful recognition of his kind and untiring efforts to promote our future welfare. And as your representative on this occasion, I cannot refrain from expressing distrust of my ability to discharge to your satisfaction the pleasing task, the performance of which, through your flattering kindness, has been delegated to me. Nevertheless, diffident as I feel myself in being the exponent of your sentiments towards our talented instructor, the unvarying personal kindness I have experienced at his hands renders the acceptance of the duty most congenial to my feelings.

I am confident that one and all now present, when reflecting in after-life upon the various emotions which influenced them during their studentship, must acknowledge with heartfelt satisfaction the truthful principles Mr. Varnell has by his every act and teaching endeavoured at all times to impress upon our minds. Such an example demands our highest appreciation, and cannot fail by common consent to entitle him to our sincerest and warmest regard.

Permit me, gentlemen, for a few moments to wander from the principal object of this address, and unite with me, as I am sure you will, in rendering tribute to others to whom also tribute is due : I speak in reference to the rest of our excellent instructors.

The students of this College have long rejoiced in the eloquent and eminent teaching of Professor Spooner, whose distinguished abilities as a pathologist and lecturer are so well known as to scarcely need comment. But since he has honoured us with his presence this evening, I am convinced that I have your united approval in seizing this opportunity for respectfully testifying our admiration of those rare and striking qualities possessed by him, which are so apparent in the force and consistency of his arguments, and the remarkable clearness and precision with which he elucidates Nature's beautiful adaptation of means to ends, so that they never fail to rivet our attention and secure from us an earnestness of mind and purpose in the prosecution of the study of that branch of science which we have chosen.

In the cattle department, it is impossible to overrate the

valuable information to be derived from the instructions given by Professor Simonds ; for I think I may assert without the least fear of contradiction, that his investigations into matters of such vital importance as the physiology and diseases incidental to domesticated animals, other than the horse, have been carried to an extent far exceeding any that have gone before him. The important facts which have resulted, and must continue to result, from his unwearied assiduity, not only place him in the first position as a cattle pathologist, but deservedly entitle him to the utmost consideration of every civilised community, and the especial gratitude of ourselves. Then, with reference to that indispensable branch of our studies, chemistry and materia medica, no one can presume to doubt the efficiency of Professor Morton, since his reputation does not merely rest upon the arduous devotion of a lifetime to instilling a knowledge of the nature and properties of the materials which enter into the composition or structure of the earth, the sea, the air, and "all that in them is," into the minds of youths laudably aspiring to be members of a noble profession ; but he claims additional fame by his discoveries, which have augmented the value of this science, and his contributions to our literature. And with regard to his method of teaching, the choice selections of soul-stirring passages from the immortal works of Britain's noblest bards, and appropriate quotations from the recorded labours of those mighty intellects, many of whom have passed away, but who for ages yet to come must be regarded as beacon lights of science, which are interspersed throughout his lectures, not only display the refined taste he has for the sublime conceptions of our loftiest poets, and evince his enthusiastic admiration for the refulgent grandeur which invests the magnificent and masterly productions of those mighty geniuses of which England is justly proud, but also smooths the rugged path of learning, and renders the otherwise somewhat tedious and difficult subject of chemistry at once agreeable and instructive.

There yet remains one who in our acknowledgments must not be passed over, one to whom our hearty thanks are due, nor should we be slow in confessing our obligations for the indefatigable services of Mr. Corby in his capacity of demonstrator of anatomy ; more particularly I would allude to the assistance he affords us in the dissecting room.

I have no doubt that this slight digression from the prominent purport of my address will not upon reflection be considered by you as ill-timed, seeing that this meeting acquires additional eclat by the presence of Professor Varnell's

colleagues, towards whom no opportunity should be lost by us for expressing our esteem.

But to return to that gentleman to whom we especially render the present well-earned tribute of honour and respect — Professor Varnell. I am sure you will, without a solitary exception, allow him to be a thorough master of the science of anatomy, the efficient teaching of which is of such paramount importance, forming as it does the only solid basis of our future acquirements. You will also admit, that our debt of gratitude to him is not lessened by his affable and comprehensive manner of explaining and simplifying those apparent complexities of symptoms, which would otherwise bewilder us, when attending him during his clinical observations upon the different cases of disease in the infirmary. Moreover, we have great cause to congratulate ourselves, that we have through him another most important channel open to us for deriving practical knowledge, consisting in the numerous horses submitted to him for examination as to soundness; by availing ourselves of which advantage our competency in after-life may be materially promoted.

His unquestioned ability in these several sections of our science must have been, from the individual experience of each of you, brought home to your minds in a manner far more vividly than I can hope to accomplish by any attempt to find words for such a purpose.

Gentlemen,—I have it in my heart to say much more, in praise of him whom it is now our delight to honour. It would be an easy task to expatiate upon his merits, for they are so numerous—indeed, they constitute a subject difficult to exhaust—but I feel assured that his quick discernment has already enabled him to divine, by our demeanour towards him upon all occasions, the silent emotions of admiration which have long been culminating within our breasts, and now find vent upon this most happy occasion; and I fear that if I attempted more than I have already given expression to, he would deem me insincere, and charge me with flattery; therefore I will not trespass further upon your patience nor his.

And now, sir, with unfeigned gratification and pleasure, I tender, on behalf of my brother students, this token of our esteem, which we offer for your acceptance, not on account of its intrinsic worth, but as an earnest evidence of our recognition of your admirable qualities, which have not only excited our admiration, but awakened the sincerest feelings towards you. And, believe me, sir, when personally, and in the name of my fellow students, I humbly pray that our all merciful God may long spare you to advance and prosper in

those paths of honour and usefulness so long trodden by yourself, and with so much benefit to the public at large and those who are fortunate enough to enjoy the privilege of your friendship, I am not offering empty or fulsome adulation, but the pure, spontaneous, and unalloyed overflowings of the hearts of your most devoted well-wishers and respectful pupils.

Mr. Varnell, in reply, spoke nearly as follows :

MR. CHAIRMAN AND GENTLEMEN,—My first duty is to thank you sincerely for this testimonial of your feelings towards me. I well remember saying, when a testimonial from the pupils of this institution was presented to me, eleven years ago this very month, that although it seemed very easy to return thanks for kindnesses received, yet I then found the task too great for adequate expression in words. And now, although it might be thought that the constant intercourse I have had with veterinary students since then would have made me less diffident in addressing you, and thereby rendered the task more easy, yet I feel that such is not the case.

I was obliged then to compress many feelings into a few words, and upon this occasion I shall have to claim your indulgence while I do so again; feeling convinced that I shall fail in expressing those sentiments which the inward monitor seems to suggest.

My task is not lessened, sir, by the very kind manner in which you have spoken of me, and of my endeavours to discharge my duties in this institution. They have often been heavy, and frequently I have thought that I ought to have done more for the students; but they have always been lightened by the kind manner in which they have been received by the pupils. Such acts as these, sir, tend much to sweeten labour, and excite the labourer to renewed exertion.

The teacher and the taught should always remember that they are in reality co-workers, and that it is only by reciprocal help that either will succeed in his efforts.

More especially is this the case with respect to the science of anatomy which must ever constitute the basis, the groundwork, of all true medical knowledge.

By its aid all becomes clear—order and design are at once apparent—the animal under your care is rendered, as it were, transparent, so that you can see into him, and through him, and thus more fully appreciate the amount of mischief that may have been produced by disease, and the changes in the condition of parts against which you have to contend, than you possibly could if ignorant of the science of anatomy.

But this knowledge is only to be obtained by diligent and continuous labour. He who wishes to acquire it, must for himself unravel the wonderful and complex arrangement of the tissues entering into the formation of the various organs of the animal body, for there is no royal road to its acquisition. You, like your predecessors, must go into the dissecting room, and there verify for yourselves the statements you hear from me in this theatre.

Remember that all extrinsic help will be but of little use to you, unless you determine to help yourselves; and that all the efforts of your teachers must prove unavailing unless you second their endeavours by a well-directed determination to learn for yourselves, and to make the information communicated to you thoroughly your own.

Knowledge so acquired will be your best defence against the attempts of evil-minded and unprincipled men; not so much in the profession to which you aspire to belong, as among the quacks who would fain make the world believe that they are a part of it; who will resort to the most disreputable means in order to carry out their empirical practices, and will not hesitate to endeavour to injure your reputation, so that they may thus increase their own.

Especially when first entering upon your professional career, you will often be annoyed by attempts of this kind; notwithstanding, let your course be always straightforward. Stoop to no unworthy or even doubtful means of advancing your interests; manfully support the dignity of the profession you have chosen, and always take care to attend, with equal solicitude and assiduity, the animals of the poor and the rich. By thus acting, you will gain the approbation of the latter and the gratitude of the former, and in the end find that by thus obtaining the respect and esteem of all rightly-thinking minds, your own interests have been better promoted than they could have been by those courses from which I have just endeavoured to dissuade you.

Many of you who are now present will in a short time present yourselves before the court of examiners, and I need scarcely say that I most sincerely wish you success in passing through that ordeal.

If any of you feel that you are not prepared for the test to which you are about to be submitted, remember that there is yet some time left, and that by steady exertion, even in a few weeks much may be accomplished.

Your teachers are by no means unconcerned spectators of your efforts. Your success, both here and in after life, is

and always must be a source of the greatest gratification to us; and if I may be allowed to speak for my colleagues in this matter, and to judge from their conduct in past times, you will find that their aid has only to be sought by you when any difficulty arises, and it will be immediately and willingly rendered.

You will, I feel assured, pardon this digression from the main object of our meeting here this evening, and allow me now to return to the subject from which I have somewhat wandered.

In accepting this handsome testimonial of the good feeling of the whole class, one of which I shall ever be proud, and which will be preserved with others I have previously received among the most cherished and valued treasures I possess, I feel that my powers of expression must fall far short of conveying my sentiments towards you. But, again I assure you that by me and mine, in grateful remembrance of your kindness, it shall be kept as long as life lasts, affording me a perpetual assurance that my labours in your behalf have been valued and esteemed by you. It will also stimulate me to renewed exertions to merit and retain your good opinion, which will ever be more valuable than any material testimonial of esteem.

To you, sir, for the very kind manner in which you have presented this testimonial, to the committee for all the trouble and labour they have bestowed thereon, and to the subscribers individually and collectively, I now tender my heartfelt thanks; and wishing every one of you a happy and prosperous journey through life, I gratefully accept this splendid gift.

The Chairman then presented to Professor Varnell a beautifully illuminated vellum scroll to accompany the testimonial; on which the following complimentary heading appeared, with the names of the students affixed beneath:

“ROYAL VETERINARY COLLEGE,
“LONDON, 24th March, 1859.

“To GEORGE VARNELL, Esq.,
“Assistant-Professor; Lecturer on
“Anatomy, Physiology, &c. &c.

“SIR,—With sincere feelings of respect, we, the Students of the Royal Veterinary College, entreat your acceptance of this Testimonial as a token of the gratitude and pride with which we are this day individually impressed. Grateful, in the true sense of the word, for the kind and unceasing endeavours evinced by you to insure that proficiency in us

the responsibility and advanced status of our profession requires, and proud that our relative position as pupils confers upon us an honorable association with one whose scientific attainments and great professional worth are universally acknowledged and most deservedly respected.

"That you may long live in health and prosperity, fully to enjoy the good opinion of all honest men your ability, affability, and integrity cannot fail ever to secure, is the fervent wish of

Your obliged and faithful pupils.

Committee.

J. J. CHEESMAN, *Chairman.*

C. S. Hurst.
J. M. Axe.
A. H. Santy.

M. Hack.
J. Martin.

T. J. Lang.
Wm. Heaps.

J. K. HAIRE,
Hon. Sec. and Treasurer."

PRESENTATION OF A TESTIMONIAL TO MR. M'CALL, OF THE EDINBURGH VETERINARY COLLEGE.

18, CLYDE STREET, EDINBURGH;
April 6, 1859.

GENTLEMEN,—Your insertion in the next month's 'Veterinarian' of the enclosed notice of a testimonial presented by the students of the Edinburgh Veterinary College to Jas. M'Call, Esq., which took place on Friday evening last, the 1st of April, will very much oblige

Your obedient Servant,
THOS. TAYLOR.

To the Editors of the 'Veterinarian.'

The students attending the Veterinary College, Clyde Street, met in the lecture-room of the college, on the evening of April 1st, for the purpose of presenting Mr. M'Call, the demonstrator of the College, with a very handsome gold watch and massive chain.

Professor Dick occupied the chair.

Mr. George Scott, one of the students, in a neat address, referred in warm terms to the high esteem, both personally and professionally, with which Mr. M'Call had inspired the

young gentlemen under his charge, and concluded by saying: "In the name of my fellow students and myself, I ask your acceptance of this watch and chain, as a mark of our sincere regard and of our appreciation of the many services you have rendered us in our studies; may it prove useful to you in your professional career, and afford you (if possible) even more pleasure in wearing than it gives us at the present moment in offering it."

Mr. M'Call returned his acknowledgments in some feeling remarks, in the course of which he defended the founder of the college and his colleagues from charges of want of energy which had been put forth against them, pointing out the success which had hitherto attended the institution, and the great influence which it had exerted upon the progress of veterinary science, not only throughout this country, but throughout the world.

Dr. Renton, in moving a vote of thanks to the chairman, alluded to the great ability and long-unaided energy with which Professor Dick had carried on the college of which he was the founder, and said he hoped that the resignation of the professor, although much desired by certain parties, might be delayed until the hearts of those who wished for such a consummation might be sick by means of waiting. (Applause.) The compliment was enthusiastically responded to by the students, and duly acknowledged by Professor Dick.

Upon the watch (which is now the second presentation made by the students to Mr. M'Call) is engraved the following inscription: "Presented to James M'Call, Esq., Professor of Veterinary Anatomy and Physiology, by the Students of the Edinburgh Veterinary College, in testimony of their appreciation of his exertions on their behalf, and of his scientific attainments and talents as a lecturer. Session 1858-59."

RUMENOTOMY IN A COW.

By EDWARD BAILEY, M.R.C.V.S., Leicester.

DECEMBER 22d, 1858.—This evening I was requested to attend a milch cow, that was taken suddenly ill. Upon my arrival shortly afterwards, she exhibited symptoms of acute indigestion. She had been fed upon boiled potatoes, with

cabbages and other prepared food, and was tied up in a cow-shed along with others, which shed being very much crowded, the air consequently was very hot and impure, and therefore ill-adapted for an animal labouring under a disease impeding the function of respiration. Under these circumstances, coupled with others, she could not have been properly attended to where she was, so I had her brought to my infirmary, a distance of about half a mile, allowing her to take her time; and she managed it tolerably well. Her stomach was now distended to such an extent that she touched both sides of the door-way as she entered the yard. This was about eight p.m. She was at once placed in a comfortable, airy, loose box, and powdered charcoal, lb.iss, diffused in a quart of water, administered to her, with a view to absorb the gaseous matters evolved. This was repeated in the course of a short time, but without affording any relief whatever.

At 9 p.m. I gave Sp. Ammon. Arom. ℥iv, in a quart of water, and this too proved ineffectual.

At 10 p.m. I gave the following draught:

℞ Magnesiae Sulph., ℥xvj;
Aloës, ℥vj;
Gentianae Pulv., ℥vj;
Tincturae Zingib., ℥j;
Aquaë, q. s. Fiat haustus.

At 11 p.m. I applied the stomach-tube, and also introduced the trochar, both of which made very little difference, the gas being mixed up, as it were, with the ingesta, which was in a state of fermentation. The Sp. Ammon. Arom. was repeated, but still was of no avail.

At 12.30, seeing there was now no chance for her, except by performing the operation of rumenotomy, as she continued to get worse and suffocation was threatened, I decided upon so doing, and that as quickly as possible. I made an incision into the left side, about four inches in length, commencing from where the trochar had punctured the body; then carried the incision through the coats of the stomach, and having secured that viscus, I proceeded to extract the pultaceous mass to the extent of a wheelbarrow full. At times the more liquid parts flowed through the orifice in a continual stream. Then, having cleansed the parts, I applied sutures to the rumen and also the abdominal parietes, and left her for the night, she being very much relieved.

December 23d, 8 a.m.—The bowels not having acted, I gave

Mag. Sulph., ℥xvj;
 Gentiana Pulv., ℥iij;
 Tinct. Zingiberis, ℥j;
 Liq. Ammon. Acet., ℥iv; in Aqua.

Allowed her a little bran mash and warm water.

In the evening, finding that the bowels had still not acted, I repeated the draught, adding

Sp. Ætheris Nitr., ℥iss.

24th.—The stomach is slightly distended with gas, but the bowels are acting freely. Gave

Sp. Ammoniac Arom., ℥iv, in Aqua q. s.

25th.—Bowels rather torpid. Again gave the purgative draught.

26th.—The medicine is operating well, and the animal apparently going on satisfactorily. Gave

Pulv. Gentianæ, ℥j;
 Sp. Ætheris Nit., ℥iss;
 Tinct. Zingib., ℥j; in haustus.

The sutures having given way, portions of the food frequently came through the aperture. Adhesion had taken place between the rumen and inner surface of the abdomen, which prevented the escaped ingesta from falling into the abdominal cavity. She feeds and ruminates well, and the secretion of milk is increasing.

The animal continued to improve until January 8th, 1859, when, having been a little over-fed, the bowels become rather constipated. The purgative was therefore repeated, and from this time the cow went on well, and by the end of the month she was perfectly recovered, and returned home, healthy granulations having closed up the wound.

POISONING OF PIGS BY COMMON SALT.

By THOS. GREGORY, M.R.C.V.S., Tunbridge.

I FULLY expected to have seen in your number for April more cases of the above, in answer to the excellent remarks of Mr. Robinson, because it is important to owners of pigs that they should be aware of the danger there is in giving salt in their food, and also that it is by no means an uncommon occurrence for pigs to be thus poisoned. I have met

with several cases during the last twenty-one years, and have found some difficulty—first, in proving the *salt to have been given*; secondly, to induce the owner to believe that death had resulted from the salt given, or that it was poisonous when mixed in excess with food.

I send three cases of such poisoning, which have occurred during the last six years, if you think them worthy a place in your Journal.

July 29th, 1853.—I was requested to see four white pigs, belonging to G. Nottidge, Esq., of Yardley Lodge, near this town. The symptoms presented were—a staggering gait, sickness, frothy discharge from the mouth, shortness of breath, coldness of ears and legs, with occasional fits of shivering. There were also dark livid spots on the sides and backs of the animals. I pronounced them at once to be cases of poisoning by salt, which had been given or put in their food. This was denied. I then examined the wash, and although slightly fermented, there was nothing in it sufficient to produce the symptoms under which the pigs were labouring. The animals soon died, and some time afterwards it was ascertained that brine had been put into the cistern.

The second instance occurred Feb. 28th, 1858, at Mrs. Deacon's, Mabledon Park. The pigs presented the same symptoms as those already described, with this addition—that they were continually walking round and round the sty, knocking their heads against the wall, and appeared in a comatose state, being insensible to either light, sound, or touch. I had no hesitation in stating these to be poisoned by salt, but could not, at first, find by what means the salt had got into their food, the man who had fed them knowing nothing of it. Upon my stating to the bailiff my decided opinion that salt was the cause, he went into the house and told the kitchen-maid, that when she cleaned out the pork tubs he wished her to save the brine for him. She replied, "You are too late, as I cleaned the tubs out yesterday." He then asked, "What became of the brine?" She replied, "I put it into the cistern with the wash for the pigs." In this instance the pigs recovered in a day or two, having only partaken of a small quantity of the wash. The third instance happened July 5th, 1858, at Meopham Park, the residence of J. T. Herring, Esq. (the celebrated animal painter). This was clearly proved to be the effect of liquor in which a round of beef had been boiled the day previous, and which was given to two fine sows, both forward in pig. I was hastily summoned, and found one sow dead on my arrival, and the other lived but an hour or two after.

The *post-mortem* appearances have been so fully and ably described by Dr. Taylor, in your Journal for March, that I have nothing to add to that part of my subject.

I repeat, I have no doubt of salt often causing the death of pigs, when given to them in excess, and think the fact cannot be given too great publicity to, so that the owners of these animals may be aware of the danger of using it at all. It is on this account I have recorded the above cases.

ULCERATIVE DISEASE OF THE HOCK-JOINT.

By R. H. DYER, M.R.C.V.S., Waterford.

THE subject of this case was an aged horse, of the cart-breed. He had met with an accident and was destroyed. Having known him to have a very considerable quantity of ossific matter deposited upon the near hock, and being lame in consequence, I was desirous of examining the cavity of the joint, more especially as the carter informed me the animal disliked any one to touch that part of the leg in the act of grooming, it being always sore.

Inspection.—All the bones comprising the joint are grown together, so that *no two bones can in any way be separated*, so much bony matter has been thrown out. The inner small metatarsal bone adheres to the large one, five inches from above downwards, by means of bony matter. This fact accounts for the stiff movement of the limb. On prosecuting the examination, I find the inferior extremity of the tibia to present the following appearance: the middle projection ulcerated, extending to the bottom of the outer groove, and to the bottom of the inner groove also, and nearly up to the top of this projection. Portions of the articular cartilage entirely removed by absorption. The astragalus: the outer prominence much inflamed, just at its middle. The inner has a deep pit scooped out by the ulcerative process, a trough large enough to bury half of a good-sized pea. In the bottom of the groove, in its centre, absorption from ulceration has also taken place.

This brief account of ulceration of the hock-joint will perhaps be sufficient for the purpose of reflection. What was the *cause* of the ulceration? Was the bony matter thrown out *first*, and the ulcerative process excited by the state of the joint? In looking at the anatomy of the joint,

and considering the physiology of the parts, I should reply, that the appearances observed in the *interior* of the joint were the result of injury *externally*, consequent upon the disease of the bones. I would argue thus, although briefly: the articular surfaces of the cushion and other bones are so constructed as to ward off concussion by means of the various constituents of the joints, cartilage, synovial membrane, &c. So that if the proper movements of these parts are interfered with, tied or bound down by ossific matter, as we find in this anchylosed joint, the different bones forming these joints, cannot be said to have the power of making use of the cushions in order to protect the parts from injury. My belief therefore is that, in this particular case, knowing as I do how long the joint had been in a state of anchylosis, the state of the interior or articular surfaces was the consequence of injury, from the bones having grown together. Moreover, I find the small metatarsal bone attached to the larger by means of ossific matter, instead of fibro-cartilage. All the movements of these bones seem to bear out the notion that the formation of bone was the primary cause of the disease of the interior of the joint.

The above is but an imperfect description of a very important disease. Enough, however, I have advanced to cause a certain amount of reflection, which is all I have aimed at, as time forbids my doing more at present.

SCARLATINA ANGINOSA.

By G. FLEMING, V.S. Military Train, Curragh Camp.

THE subject of this communication, a robust troop-mare, of a black colour, aged five years, and lately purchased for the service of this corps, arrived in camp from Dublin, on the afternoon of the 31st of December last.

During the three preceding days, whilst she was on the march, the weather was exceedingly boisterous and cold, and the billeting stables very bad and uncomfortable.

On the morning of the 1st January, she was admitted to the hospital stables on suspicion of being affected with mange, a disease of very frequent occurrence amongst our horses when on coming here. A careful inspection only revealed a few small spots of skin, about the sides of the face, denuded of hair, slightly scurfy and hot, but with no perceptible

abrasion, or symptom of irritation. With the exception of a little dulness, heat and pastiness of the mouth, and lachrymation, nothing else abnormal could be detected. Some simple treatment was prescribed, and the animal allowed to remain in the infirmary stables.

January 3d.—The anterior extremities, from the coronets to above the knees, are hot, painful, and tumefied. The left side of the neck is also affected; a large irregular portion being slightly elevated and hot, and the hair on this, as well as on the limbs, can be rubbed off or pulled out with the greatest ease. Desquamation of the cuticle, in dry powdery scales, leaving the skin, notwithstanding the black pigmentary layer, of a dusky red colour. The inflammation appears to localise itself more particularly about the carpal articulations, rendering locomotion painful and constrained. Effusion into the areolar tissue about the breast, which is covered with perspiration. Pulse 70, and very feeble in character. Respirations 14. Appetite moderate. Give

Potass. Nit., $\mathfrak{z}\text{iv}$;

Ammon. Bicarb., $\mathfrak{z}\text{ij}$; in bolus, twice a day.

Apply to the skin refrigerant lotions. Keep the body well clothed, and the stable cool and fresh. Throw up enemata of tepid water morning and evening.

4th.—Pulse 90, and very weak. Respirations increased to 18 per minute. The tumefaction has extended to the elbows, and the posterior extremities are affected as high as the hocks. Increased heat of skin, and continuance of desquamation. The mucous membrane of the mouth is of a brick-red colour, and there is tumefaction of the submaxillary glands. About the root of the mane, on the sides of the body, underneath the belly, and about the flanks, the hair is continually drenched with perspiration, which keeps those healthy portions of skin very cool.

5th.—Venous regurgitation with increased impulse of the heart. Pulse regular, but at the submaxillary artery almost imperceptible.

6th.—Venous regurgitation extending nearly as high as the bifurcation of the jugulars. Accompanying the healthy sounds of the heart, loudest with the first, faint with the second systole, is a puffing or blowing sound, most distinctly heard by placing the stethoscope between the first rib and the right side of the sternum, at the opening into the thorax. Respiratory murmur very faint, with increased bronchial sound in both lungs.

The inflammation of the skin has extended to the other

side of the neck, which is now, with the limbs, nearly deprived of hair, giving the animal a very peculiar, and the disease a very characteristic appearance.

The permanent hair, however, of the mane, legs, and tail, still remains firm. To the touch the skin is extremely harsh and dry, more especially about the articulations, and the intensity of the heat is something astonishing. Its exalted vascularity is readily seen if the thinnest pellicle of epidermis be removed, as, if bleeding does not immediately follow, a bright red arterial patch is produced. To such an extent has this arrived that bandages cannot be put on the limbs; and where the mare has by accident come slightly in contact with the wall, an extensive raw surface remains. Give

Potass. Iod., ʒij;
Opii Pulv., ʒj;
Spt. Æth. Nit., ʒj. Thrice a day.

7th.—Pulse 80. Respirations 20, and laboured. Several small, slightly elevated, irregular patches exist over the trunk. The mare is very much depressed, but still eats and drinks a little. She has not lain down since the commencement of the disease.

8th.—Animal a little easier. There is still venous regurgitation, but the abnormal *bruit* is much diminished, and only heard with the first sound of the heart. The hair still comes off in large masses, clotted together with epidermic scales and perspiration.

9th, 10 a.m.—A sudden change has taken place this morning. The swellings of the limbs, neck, and body have nearly disappeared, and with them the heat and tenderness. Pulse 75, small and jerking. Great uneasiness, with well-marked symptoms of enteritis. Animal pawing and rolling about in the loose box; tympanitic enlargement of the abdomen, with pain on pressure or percussion. The throat appears to be affected, as there is some difficulty in swallowing fluids, and more with solids. Give

Aloës Barb., ʒiv;
Olei Lini, Oss;
Opii Pulv., ʒij.

Throw up enemata every two hours. Apply revulsives to the surface of the abdomen.

12 a.m.—Enteritic symptoms more urgent. Pulse 98 and thready. Give Opii Pulv., ʒij, in solution, and as an injection, Opii Pulv., ʒij, cum Ol. Olivæ, Oss. Apply a strong mustard cataplasm to the abdomen, to be repeated every hour.

8 p.m.—Animal much easier, and evidently under the influence of the large doses of opium she has been receiving. By the attempts she made to drink some gruel, my attention was attracted to the state of her mouth, and on examination I found the sides of the tongue and the mucous membrane of the cheeks and gums covered with large, irregular, but well-defined purple-coloured patches, closely resembling the tint assumed by tanned leather after being steeped in water. The greatest difficulty is experienced in breathing, and swallowing is all but impossible, the greater portion of the fluids returning by the nostrils.

Ulcerations exist at the commissures of the mouth, where the skin is naturally thrown into small folds, and the integument about the cheeks and lips is hard and painful.

Mustard applications to the throat, alternate gargles of alum and the biborate of soda for the mouth, and fumigations of hot-water vapour and turpentine.

10th.—The enteritic symptoms have almost disappeared, and the mare makes attempts to eat a little mash. Water can be swallowed in small quantities. Pulse 75. Respiration tolerably tranquil. The purple discolorations of the mouth are becoming of a lighter colour, and on one side of the tongue sloughing has taken place, leaving a healthy granulating surface. Give

Ammon. Bicarb., $\mathfrak{z}\text{ij}$;
Tinct. Opii, $\mathfrak{z}\text{ss}$. Thrice a day.

11th.—Great improvement. All the coloured patches of mucous membrane are sloughing, leaving the mouth very tender.

12th.—Still improving. Give ferruginous tonics, and dress over the bare surfaces of skin with

Ol. Olivæ, Oj;
Ol. Terebinth., $\mathfrak{z}\text{j}$:

to promote the growth of the hair, as the skin is now tolerably cool, and desquamation has ceased.

13th.—From this date up to the 31st everything has gone on well, and the return to health has been rapid and satisfactory, owing, no doubt, to the strong and vigorous constitution possessed by the animal.

When I last saw her she was in excellent health, and though she still presented a rather disreputable appearance, yet the new hair was growing rapidly over those places where, weeks before, nutrition was totally perverted.

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By WALKER WATSON, M.R.C.V.S., Rugby.

THE NATURAL SYSTEM.

THIS system, as first sketched out by Jussieu, and enlarged by De Candolle and other botanists, will require a more detailed description, it being the one most generally adopted by botanists, and also that by which I shall be guided in describing the plants I purpose bringing under notice.

The chief difference between the Linnean and the Natural systems is this, that whereas a plant may be at once recognised as belonging to the former by the number and situation of its reproductive organs, it conveys to us no knowledge of the general relationship as regards properties, &c., which one plant bears to another. On the other hand, by the Natural system plants are grouped together into classes which most resemble each other, not only as regards their reproductive organs, but by the general structure, properties, and habits of the whole. To illustrate this we take the *Atropa belladonna* (*deadly nightshade*), and find according to the Linnean system it belongs to the class Pentandria (having five stamens), order Monogynia (having one stile). From this we get no information as to the general characters of the other plants belonging to the same class and order, many of which in fact possess widely different properties. But examining this same plant according to the Natural system, we find it to belong to the class Exogena, Natural order Solanaceæ (*nightshades*), and we may at once infer that the plants belonging to this order possess similar properties, which indeed we find to be the case, all being more or less poisonous. Such, for instance, are the *Hyoscyamus niger* (*henbane*), *Datura stramonium* (*thorn apple*), *Nicotiana tabacum* (*tobacco*), and others.

THE NATURAL SYSTEM divides plants into three great primary divisions, viz., *Exogens* or *Dicotyledons*, *Endogens* or *Monocotyledons*, and *Acrogens* or *Acotyledons*. These three divisions are distinguished from each other in the following manner :

1. EXOGENS OR DICOTYLEDONS.

To this division belong most of our European plants. The class may be known by the following characters :

1. *The seed* has two, or rarely more, cotyledons (hence the term dicotyledon) or seed-lobes, which are placed opposite each other, representing the undeveloped leaves. This may be observed in the germination of the garden bean (*Faba vulgaris*).

2. *The stem* will be found to consist of three principal structures—pith, wood, and bark, connected by a number of radiating lines called medullary rays. The stem increases in size by annual additions of new matter, taking place from within outwards (hence the term Exogen), between the pith and the bark. If we examine a transverse section of the stems of some of our larger trees, such as the elm (*Ulmus campestris*), or oak (*Quercus pedunculata*), we shall observe a number of concentric rings with lines radiating from the centre. These rings are the annual depositions of new material, and as only one of these takes place yearly, the age of the tree may be ascertained by their number. The radiating lines are the medullary rays.

3. *Leaves* in exogenous plants will be found to have their veins branching in various directions, anastomosing and forming a kind of network, generally distinctly articulated to the stem, and of many shapes. This may be well seen in the leaves of the currant (*Ribes rubrum*), the cherry (*Cerasus communis*), and others.

4. *Flowers*.—Each part of the flower generally consists of a division into four or five parts, or some multiple of that number. This may be observed in the common wall-flower (*Cheiranthus chari*).

These, then, are the four principal characters by which Exogens are distinguished. There are other minor distinctions, but these it will not be necessary for me to enter into in this brief outline.

2. ENDOGENS OR MONOCOTYLEDONS.

The chief representatives of this class of plants in this country are the grasses and sedges, few of which acquire the magnitude of trees, although in warmer climates they attain a great size, such for instance, as the palms, &c. Endogens or Monocotyledons may be known by the following characters:

1. *The seed* has only one cotyledon, or seed-lobe; hence the term Monocotyledon. An example of this is seen in the wild tulip (*Tulipa sylvestris*).

2. The *stem* presents no distinct division into pith, wood, and bark, and it increases by the addition of new bundles of vascular tissue to its interior; hence the term Endogen. A transverse section presents no concentric rings or medullary rays. This may be observed in our common reeds (*Phragmites communis*), and others.

3. The *leaves*.—The veins, instead of being spread out in a variety of forms resembling a network, run parallel with each other, and are connected by simple transverse unbranched veins. They are generally simple, linear in shape, and but rarely articulated to the stem. Examples may be seen in the grasses, meadow saffron (*Colchicum autumnale*), &c.

4. The *flower*.—Each part consists of three or some multiple of that number, as three sepals, six stamens, &c. An example is in the white lily (*Lilium candidum*).

3. ACROGENS OR ACOTYLEDONS.

This class corresponds with the twenty-fourth, or Cryptogamia, of the Linnean system. They have no true flowers, consequently produce no seed; hence the term Acotyledon. Their reproductive organs are called spores. Few of them have any distinct stem, and in these cases they increase by additions to their summits, having the wood in the interior arranged in a zigzag manner. This may be observed in some of the ferns. Most Acrogens have neither stem, leaves, nor flowers. Examples may be seen in the mosses, fungi, &c.

These are the three primary divisions under which all plants are classed according to the Natural system; but to make the distinctions more clear, I have taken the following arrangement from a very useful work to beginners, viz., Lindley's 'School Botany.'

CLASS.	Wood.	Leaves.	Flowers.	Embryo.
1. Exogens	Concentric	Reticulated	4-5✓	Dicotyledonous.
2. Endogens	Confused	Parallel-veined	3✓	Monocotyledonous.
3. Cryptogamia or Acrogens	Sinuous or 0	Fork-veined or 0	0	0

A CASE OF STRANGULATION OF THE ILIUM IN A HORSE.

By JOHN ANDERSON, V.S., Glasgow.

ON the 3d of February, 1859, an aged brown Clydesdale gelding, the property of Mr. Finlay McFadyen, contractor, was seized with an attack of colic. The stable-keeper back-raked him, and gave the abdomen a good rubbing, after which the animal appeared quite well up to about two o'clock on Friday morning, when he became again pained, and continued so, despite all the stable-keeper's exertions. At five o'clock he sent for Mr. Charles Moir, V.S., who administered everything calculated to alleviate the poor animal's sufferings, but all was of no avail. The animal gradually got worse, and when I was called in about nine o'clock a.m. I found him groaning and apparently in great agony; pulse imperceptible, visible mucous membranes of a yellowish appearance, perspiration profuse, respiration laboured, the nostrils very much dilated. He had a great desire for water, and whenever he heard it running from the pipe or splashing in the buckets he neighed. He would draw all four feet together and turn round and round, then lay down cautiously, generally on the off side. Soon he got up again, and every now and then gave a determined vicious kick with his near hind leg. This latter symptom I wish your readers particularly to take notice of, I having been frequently told by my father that whenever I saw a horse in great agony, and giving such peculiar kicks with the near hind leg, I should invariably find a twist of the ilium to exist. From the above fact I ventured to assert the horse in question to have strangulation of the ilium, and from the appearances presented after death you will perceive that my diagnosis was correct. The horse died about 1.30 p.m.

Post-mortem appearances.—On opening the abdominal cavity, I found a portion of the mesentery lacerated, and just at that point where the ilium enters the cæcum it was twice twisted round on itself like a rope, and the intestine, for about three feet anterior to the twist, was firmly impacted with ingesta. On opening the stomach, I found a considerable number of the lumbrici in it. I may here mention that this is the fourth or fifth case I have had since last April where I have found those worms in large number in the stomach. In one case, belonging to Messrs. Wilson and Co., of

Knightswood Colliery, I found upwards of two hundred in that organ. I have never seen any such cases related either in your valuable Journal or any other veterinary works. I have spoken to several veterinary surgeons on the subject, and they all seem to say that the worms must have entered the stomach after death; but I think not, as in that case of the Messrs. Wilson's I opened the horse immediately after death. I likewise found them throughout the entire length of the small intestines. The liver was slightly congested. All the other internal viscera were perfectly healthy.

Remarks.—The cause of the uneasiness at first exhibited, in my opinion, must have been owing to the worms shifting from the intestines, where they are generally found, into the stomach; and from the animal tumbling about, the laceration of the mesentery ensued, which would allow that portion of the ilium which was in immediate connexion with the lacerated mesentery to move about uncontrolled, and the consequence of this was the strangulation of that intestine, which took place when that particular symptom, namely, kicking with the near hind leg, presented itself. My father informs me that he has had three cases similar to the above, and in each case he observed this kicking to occur.

I should like very much to know if any of your readers have noticed it as a pathognomonic symptom? Also, if lumbrici in the stomach is a common occurrence?

ON THE DISINTEGRATION OF MUSCULAR FIBRE AS CONNECTED WITH "MORBUS BRIGHTII."

By P. SMALE, V.S., Leamington.

IN disintegration of muscular fibre by oxidation through the means of NO_5 , I find that the first stage is a kind of albumen, in molecular globules, similar to that found in the lacteals previous to their entering the mesenteric glands, called by Dr. Carpenter albuminose, which by those glands is converted into true albumen, proving those glands to be, as I believe all glands devoid of ducts are, deoxidizing and therefore assimilating organs. This is able to permeate moist membranes, while albumen is not, at least from the external to the internal.

I think this state of effete matter may throw some light on the cause of that condition of kidney known as morbus

Brightii; for if oxidation be arrested at this stage, it is evident that nature will expel the obnoxious matter by the excretory ducts, and most likely by the kidneys, causing thereby the tubuli uriniferi to be plugged up, or cased over, with the same albuminous matter, as is found to be the case by microscopic investigation in this disease. I think this apparent cause is more in accordance with physiology than the one quoted by Mr. Percivall in his article on albuminous urine, in his work, viz., "The non-assimilation of the chyle into blood, and so becoming obnoxious to the system, is excreted by the kidneys." For seeing that the cause which mostly produces this disease is want of oxygen, from (in the human subject) sedentary habits and the too free use, or rather abuse, of alcohol; and (in the horse) want of exercise and ill-ventilated stables, which I consider tend rather to promote than retard assimilation; it appears to me that the albuminous effusion is much more likely to be caused by the stoppage of further oxidation of effete matter than by the want of deoxidation of sanguineous matter, as I believe all assimilation to be purely a deoxidizing process.

This stage of disintegration shows also how serous effusions, as serous abscess, &c., should be treated; for as albumen cannot be absorbed as albumen, should we not endeavour to reduce it to the state of albuminose, which is readily taken up by the lymphatics or capillaries? And this desired change, I think, may be wrought by electro-negative chemicals, either those which give up their oxygen readily, or others whose affinity for hydrogen is so great as to cause them to be oxidizers indirectly, of which class I consider iodine and chlorine to be the chief and most efficacious.

DEATH OF A HORSE FROM FEAR.

THE Lille journals state that a horse died a few days back, near that place, from a sudden attack of fear. It was harnessed to a cart, and was waiting at a level crossing for a train to pass, when, on hearing the noise of the locomotive, it was seized with a violent trembling in all its limbs, and at last fell dead. It had previously had other attacks of the same kind, although to a less degree.

Facts and Observations.

POSTHUMOUS HONOURS.—REINTERMENT OF THE REMAINS
OF JOHN HUNTER.—MONUMENT TO HIS MEMORY—
ALSO TO HARVEY.

IN an early number of our Journal we expressed a dislike to posthumous honours. Circumstances, however, may arise that seem to demand them; and such appears to be the case at the present time in reference to two of the greatest men of this country connected with the science of medicine—Hunter and Harvey.

A modern writer, adverting to this subject generally, says, “We are living, it would seem, in a time of retributions. The age which has been characterised as emphatically the age of practical applications, has an ear and a heart, it is found, open to sentimental ones. That science to which the world of our day has so largely surrendered itself is not, after all, the cold, ungenial spirit which it was a fashion once to call her. In her search over the field of fact she comes now and then, we see, on a neglected grave, and by its side she takes a reverent stand. In the very whirl of her rush over the present she will pause to restore, with pious hand, some fading inscription of the past. This busy period of ours finds leisure for the verification of old titles and the redress of posthumous wrongs.”

The medical and other periodicals have announced the fact that in March 28th the remains of John Hunter, after reposing since 1793 in the vaults of St. Martin’s-in-the-Fields, were reinterred within the precincts of Westminster Abbey, on the north side of the nave, at the feet of Ben Jonson, and side by side with the late Sir Robert Wilson, the once popular representative of Southwark and the chivalric defender of Queen Caroline. The reinterment took place immediately after the afternoon service, the anthem of which was most happily chosen for the occasion. It was, “When my ears heard him, then they blessed him; and when my eyes saw him, they bore witness of him. Now his body is buried in peace, but his name liveth evermore.” After the service the trustees of the Museum, the president and council of the College of Physicians, the president and council of the College of Surgeons, and several of the most eminent members of the medical profession, proceeded with the Dean of Westminster to the Jerusalem Chamber (the remains having been

removed there the day before), where a procession was formed, which, as the organ pealed forth the "Dead March" in "Saul," proceeded to the north transept, where the remains were lying, and returned with them to the grave, into which they were lowered without any additional Church ceremony. Among those present were Professor Owen, Professor Ferguson, Mr. Hepburn, Mr. Alexander, Dr. Forbes Winslow, Mr. J. M. Arnett, Mr. Luke, Dr. Elliotson, Dr. Coulson, Mr. J. F. Clarke, &c.

It appears that the body of this celebrated physiologist was placed in the vaults of St. Martin's Church, without even a tablet stating where they had laid him. The coffin, through the earnestness of Mr. F. Buckland, Assistant-Surgeon 2d Life Guards, assisted by Mr. Queckett, was found under many others, and ascertained to be in a state of excellent preservation. On it was a brass plate, on which, with the family arms, was inscribed : "John Hunter, Esq. Died 16th October, 1793, aged 64 years." Below this the College of Surgeons have had another affixed, with this inscription : "These remains were removed from the Church of St. Martin's-in-the-Fields, by the Royal College of Surgeons of England, March 21st, 1859."

It is now intended to erect a monument in the Abbey to his memory, and a committee has been formed for the purpose of receiving subscriptions, which already amount to several hundred pounds. We concur with this, and the more so since Mr. Hunter took a warm interest in the promotion of veterinary science, and was a leading member of the experimental committee which was wont to meet at the Royal Veterinary College soon after its foundation.

Well has his biographer said—"It may be thought that the author of the Hunterian Museum needs no other memorial of his worth than the proud one he has himself erected—nor does he—to perpetuate his fame. Still, it would be a fitting act of respect to his memory, from those who enjoy the benefit of the rich legacy of his genius, to enrol his name among those of the other gifted men whose worth stands recorded in Westminster Abbey." This they will now have an opportunity of doing, and we trust the memorial will be one in every way worthy of the individual to whom it is raised and the profession to which he belonged.

A STATUE FOR HARVEY.

The *Medical Times* says : "Now that we are likely to have a monument to John Hunter in Westminster Abbey, and

Jenner's statue adorns Trafalgar Square, one naturally asks why is Harvey left to repose in the private family vault of an Essex village church? Two hundred years has he reposed there. Clothed in lead, and followed erewhile by his sorrowing colleagues of the Physicians' College, he was borne to burial at Hempstead, in Essex. And there, at this hour, says Dr. Willis, lies the lead that laps him, little changed, and showing the outline of the form within. How much more worthy of preservation these remains than those brought in our time with so much pomp from St. Helena to a royal sepulchre! Well may a correspondent write, 'In no country but England would the remains of the discoverer of the circulation of the blood have been left to repose so long in obscurity!'

QUANTITY OF BLOOD IN A HORSE.

THE weight of a horse being assumed, says the *American Veterinary Journal*, as 1200 pounds, the quantity of blood will be 84 quarts, or 168 pounds, of which 45 quarts, or 90 pounds, will flow from the jugular vein previous to death, although a much smaller quantity will sometimes deprive the animal of life.

CALCULI IN THE INTESTINES OF HORSES.

ONE of the horses belonging to Messrs. Merry and Nutter, provision merchants, of Whitechapel, while at work, was taken suddenly ill with stoppage of the bowels. Mr. Williams, veterinary surgeon, on being sent for, prescribed the ordinary medicines, but without effect, as the animal died in four or five hours, after suffering the greatest agony. An examination of the body after death showed that the stoppage was produced by a calculus in the intestines. It measures nineteen inches in circumference, and weighs five pounds and a half; is hard, polished, and perfectly round, excepting in one part. Although this must have been the growth of years, the horse was apparently in good health till the day of his death. Several smaller calculi were in course of formation.

Mr. Green, a veterinary surgeon, of Greenwich, was called upon by a gentleman residing at Blackheath to attend a favorite and valuable horse. Notwithstanding every attention was paid, the animal died, and, on the body being opened, six extremely large stones, of a conical form, one of which weighs upwards of 6lbs., were found in the intestines. The larger one having become shifted from the position in which its formation had taken place had thus caused death.

PONY POISONED BY YEW LEAVES.

A FEW days ago, a favorite pony, the property of Albert Smith, Esq., of Sheffield, was found dead in the field. Mr. Turner, veterinary surgeon, was called in, and found that the pony had been poisoned by eating the cuttings from the yew, which had been carried as waste from the shrubbery to the corner of the field. Another valuable animal, grazing in the same field, would have fallen a victim but for the skilful aid rendered by Mr. Turner.

ACTION OF STRYCHNIA AND WOURARA.

THE physiological action of strychnia and wourara is asserted to be the same in all important particulars by MM. Martin, Magrow, and Buisson. The antagonism which has been said to exist between these poisons is therefore imaginary.

A NEW LOCAL ANÆSTHETIC.

M. A. CLAISSE has been in the habit of using as a local anæsthetic a solution of camphor in sulphuric ether. A small flask is filled one third with powdered camphor, to which is added sulphuric ether q. s. to fill it. A piece of sponge dipped in this is to be rubbed on the part to be operated on for about a minute, when abscesses may be opened and the minor operations of surgery performed without the patient feeling any pain.

Extracts from British and Foreign Journals.

THE LATE SHEEP-POISONING CASE.

WANT of space in our last number prevented us from making any comments on the above case, a report of which we gave in full, considering its importance demanded it.

In the *Pharmaceutical Journal* for last month occur the following observations in reference to it; which being in perfect accordance with our views, we hesitate not to extract them from their association with other relevant matter.

“To those who consider that severity of punishment and penalties *in terrorem* constitute the essence of good legislation, it may be satisfactory to find that, even in the present state of the law, a chemist may be liable to a verdict against him, with £1400 damages, for injury resulting from the use of a poison sold by him in one transaction across the counter. There are others, however, who think that purchasers as well as vendors should be required to use precautions in reference to poisons, and who consider the revision of the sentence at a new trial as nothing more than an act of justice to the defendant.

“A report of the case (*Black v. Elliot*) will be found in another part of this number, and it has also been very generally reported in the metropolitan and provincial papers, in some instances with rather severe comments on the verdict. We can scarcely conceive it possible that such a verdict will be confirmed at the new trial about to take place; and the elaborate investigation by Dr. Macadam and Mr. Gamgee, reported in another part of this number, also tends greatly to strengthen the position of the defendant, as no injury was occasioned to any of the animals experimented upon, although the wash was subjected to a much more severe test than would have been justified by Mr. Elliot's instructions.

“On a review of the case, as stated in the reports of the trial, it appears that the purchaser, as well as the vendor, knew that the compound sold was a deadly poison, so rapidly fatal in its effects, that immersion in it for less than a minute was sufficient to destroy animal life, on which account it was used as the most effectual remedy against certain kinds of vermin in sheep. It was proved that the defendant had sold within three years at the rate of 500 powders per annum, each powder being sufficient to make

the wash for fifty sheep; and of the 25,000 sheep so dipped, not one case of accident or misadventure was reported. The plaintiff had not previously used the wash, but, in consequence of an advertisement, purchased the materials, with which the usual printed directions were given, and such verbal information as at the time was supposed to be requisite and sufficient. It was proved that the dipping had been performed with such rapidity, namely, at the rate of about three sheep in two minutes, that several experienced farmers thought it would be scarcely possible to drain the fleeces effectually from the surplus fluid in the time. The sheep were then turned into pasture, and the drippings from the wool, washed by rain in the night, had contaminated the herbage with arsenic, which was proved by analysis to be present on some of the grass and sods from the field.

“This involved the question in still greater difficulty; for before trying the issue between the plaintiff and defendant, it was important to decide whether blame attached to either party, or whether the disaster was attributable to the state of the weather, and consequently to be considered as a misfortune arising from no fault. The rapidity with which the operation was performed naturally raises the question, whether due and sufficient precautions were observed in the process, on which considerable doubt is thrown by the evidence in that part of the case. It is proved that the same kind of composition has been used successfully for many years, and to a large extent, which is also confirmed by the experiments above referred to. No case of an accident or misadventure is brought forward, except on this last occasion, when 850 sheep died of arsenical poisoning, being nearly all that were dipped. * * * * In the Burton case there was no evidence of warranty or of misrepresentation on the part of the defendant, while on the other side there were strong grounds for believing that the operation of dipping was performed with a rapidity incompatible with due care and precaution. Yet the jury ignored this latter circumstance, and threw the entire responsibility on the vendor of the poison.

“Trial by jury is extolled as one of the bulwarks of our liberties, and its introduction as an element into our courts of law is revered as an important epoch in the history of the country. In ancient times, when sovereigns were habitually despotic and tyrannical, and judges no less venial and corrupt, the intervention of trial by jury as a safety-valve between the oppressors and the oppressed was an important step in securing to some extent the liberty of the subject.

In numerous instances, probably in a majority, it may be an effectual and satisfactory mode of arriving at the ends of justice. In others, however, and of this class we think the Burton sheep-poisoning case is an example, this mode of trial is unsatisfactory and ineffectual, on account of the difficulty, we might almost say the impossibility, of finding twelve jurymen qualified to adjudicate in a matter of so much intricacy and delicacy, free from local or personal bias, and in other respects competent to ensure impartial justice. In an agricultural district, a certain amount of sympathy or fellow feeling among the farmers is natural, and the chemical intricacies of the question not being understood with reference to the limits between a safe and a hazardous mode of applying a poisonous compound, it was not surprising that the *primâ facie* impression should be unfavorable to the defendant. Yet it was strange that the very questionable mode in which the process was performed was not thrown into the scale in mitigation of the damages. On the contrary, the chemist against whom no negligence or carelessness is proved, is made responsible for the entire loss, while the question, "Would it be possible safely to dip 800 sheep, at the rate of three in two minutes?" remains unanswered. The jury were, we presume, impressed with a belief in the justice of their verdict, but the question is, were they competent and impartial judges? It is well known that local prejudices and customs are sometimes so inherent in the mind as to warp the judgment and make an unbiased decision almost an impossibility. For example, an *Englishman*, being a party to a suit in Wales about to be tried by a *Welsh* jury, would act wisely to consent to any compromise rather than go into court. By this means he would save the costs of the action. Instances also occur where religious or political bias, or party spirit, interferes with the operation of trial by jury, which thereupon ceases to be in practice what it is in theory. For these exceptional cases, and especially where questions of delicate chemical or medical science are involved, the intervention of an enlightened scientific tribunal would promote the ends of justice.

"The reaction in public opinion after the first impulse of excitement has subsided, sometimes goes from one extreme to the other, and as the general impression changes, it can scarcely be supposed that a jury, selected from the public at large, could escape the indirect influence of such bias. A farmer, having lost eight hundred sheep by a misadventure, claims the universal sympathy of his neighbours, whose primary desire is that of indemnifying him for his loss, but

when that has been done at the expense of another party, the sympathy goes in the other direction, especially if the culpability of the second party has not been clearly proved. We should, therefore, not be surprised to see the decision reversed at the new trial, or, at all events, the damages very considerably reduced upon a reconsideration of the facts of the case, especially after the additional evidence obtained in the course of subsequent investigations.”

ON VOLTAIC NARCOTISM.

IN our number for March, we directed the attention of our readers to Dr. Richardson's experiments for producing local anæsthesia by the combined action of galvanism and certain narcotic agents.

Dr. A. Waller, professor of physiology, Queen's College, Birmingham, in an article on this subject in the *Medical Times and Gazette*, says, that he considers the electrical action has no influence in causing the loss of sensation, as this may be obtained by the use of the narcotic agents alone.

His experiments are given in detail, and the conclusions to which he has arrived from them are :

“1st. Application of a mixture of equal parts of tincture of aconite and chloroform will produce loss of vascularity, and nearly complete anæsthesia after the lapse of ten to fifteen minutes on the human skin.

“2d. This anæsthetic is neither retarded nor accelerated by connexion with the poles of the voltaic battery.

“3d. The anæsthesia produced is circumscribed to the spot on which the narcotizing mixture is applied.

“4th. This insensibility is confined to the integuments, and does not extend to the deep-seated parts.

“5th. The conclusions of Dr. Richardson relative to painless amputation of the limb of the dog are not founded on sufficient evidence, as I found that on this animal amputation of the leg without the use of any anæsthetic means produced exactly the same symptoms as those observed by Dr. Richardson after the use of voltaic narcotism for upwards of half-an-hour; the section of the skin and of the tendon of Achilles being, according to my experiments on the dog, naturally painless operations.

“6th. Dr. Richardson, in his experiments on the compres-

sion of the sciatic nerve, appears to have overlooked its exact anatomical distribution.

“7th. The insensibility is caused by the local absorption of the mixture.

“8th. This absorption is in certain cases sufficient to produce death after the lapse of two hours.

“9th. It is not improbable that in infants and children, from the comparative thinness of the cutis, the application of the narcotic over a surface of two or three inches square would be sufficient to produce death.

“10th. In all ordinary cases of abraded or cut surfaces, the application of the narcotic mixture may be attended with considerable danger on the adult.

“11th. The use of this anæsthetic agent in cases of tooth extraction is particularly objectionable.

“12th. The action of the narcotizing fluid, with or without the electric current, when applied to the healthy skin, is attended by a severe local inflammation of a most painful and obstinate character, which would be liable to introduce dangerous complications into surgical operations.”

WONDERS OF THE MICROSCOPE.

By A. S. COPEMAN, V.S., Utica, N.Y.

HISTOLOGY, or the science of the minute structure of the organs of animals and plants, is one of the many discoveries of this fruitful nineteenth century; glimpses, however, of organic structure, had been obtained by the earlier microscopists, Luhwenhock, Malpighi, Hooke, and others; but these, for the most part, consisted of unconnected observations, from which it was impossible to educe any of the general laws of formation and development. The microscope, except as a mere toy, fell into disuse during the greater part of the eighteenth century, nor was it until the last twenty-five years that this instrument was rendered capable of yielding such a magnifying power, together with such clearness of definition, as is necessary for the investigation of this most interesting and important field of research.

One of the primary and most invaluable results brought out by elaborate examination of the minute structure of organized beings is, that even a closer unity of organization exists among these structures than is found in the larger

organs of animals visible to the unassisted eye. While little, if any, anatomical analogy is discoverable between the larger parts of animals and plants, the closest ties of organization are exhibited by the microscope in the minute sections; and it is demonstrable, as we shall hereafter attempt to show, that a unity of plan in structure and development may be traced throughout the organic world.

In organized beings nature works out her most secret processes through structures too minute for observation unless by the assistance of the microscope. The microscope widens and extends the power of vision, and creates a new world of observation. By it that which the unaided mind could only imagine, or vaguely indicate as a possible existence, is demonstrated, and the structure which was a puzzle and a mystery becomes perfectly understood. When we inspect with our unaided vision any animal or plant, we detect a variety of evidences of organization or structure; but there is in every part of every vegetable or animal production an almost infinite amount of organization wholly invisible to the unassisted sight, and which is revealed only by the powers of the microscope.

The vegetable and animal kingdoms, with a wonderful distinction in form and function, have yet relations so close, and a dependence so absolute, that the principles which regulate the growth and functions of one cannot be understood without reference to the other, and researches prosecuted by the aid of the microscope are every day increasing our knowledge of the details of this great fact.

It is only a few years ago that the existence of cells in plants, if not altogether ignored, was regarded as a matter of little or no consequence, and vegetable physiologists speculated on the functions of plants, without knowing anything of the agencies by which they were produced. Microscopic research has, however, shown us that it is in the interior of these minute constituents of vegetable tissue that all the functions of plants are carried on. Hence we may truly say that the principles of the anatomy and physiology of the vegetable cells are the principles of vegetable anatomy and physiology.

By the aid of the microscope the physiologist is able to study the several organs of which vegetables are composed. If, for instance, it is desired to ascertain the mode of growth in cells, we may appeal to the simple *Algæ*. Here the observer may trace, step by step, the division of the "primitive mother cells," with nothing to prevent his view; or, if he takes one of the simple *Confervæ*, he can ascertain exactly

what changes the "primordial utricle" is undergoing; he can watch the subdivision of one into two new cells, or he can investigate in *Chara* the currents which traverse the cells; and by carefully focusing, this *circulation* may be seen in broad streams, which detach and carry along little oval or globular bodies; thus the cell's contents are kept in a sort of twisting or rolling movement. He can also observe the wonderful union of separate filaments, the formation of a "vital spore" from the union of the contents of neighbouring cells, and many other points of interest to the physiologist.

If his attention be turned to the Cryptogamiæ, or flowerless plants, he will find a form of *spermatozoid* so closely resembling the impregnatory bodies of the higher animals, as to open his mind more strongly than ever to a conviction of the intimate bond by which all the members of the organized world are bound. Such investigations will then come in aid of those relative to the development of spermatozoa cells, &c., in animals, and, consequently, the microscopist will be able to form more exact notions as to the vital actions in the animal and vegetable kingdoms than are usually held by those who confine their investigations to either subdivision of the organized world.

The history of the discovery of the reproduction of the simplest plants (club mosses, ferns, &c.), by the agency of *sperm-cells* and *germ-cells*, is one of the most brilliant pages in the records of microscopic research.

There is a very interesting group of fungi, known as "moulds," found almost everywhere, for all organized matter undergoing chemical change supplies a fitting matrix for their development. The blue mould of cheese, the brick-red cheese-mould, and the scarlet or orange strata which grow on tubers or roots stowed up for use, when commencing to decay, are familiar examples. The silk or cloth stored up in wardrobes, the meal and sugar in our kitchens, nay, the very glass of our windows, suffer from them in greater or less degree. Some of the species are developed with extreme rapidity, and a few years since, when the barrack bread was so much affected in Paris by a species of fungi, a very few hours were sufficient for its development, and the mould was in active growth almost before the bread was cold; indeed, it was proved that the *spores* were capable of enduring a temperature of 212° Fah., without losing their power of germination. Such facts, then, are no proof of spontaneous or equivocal generation.

The occurrence of fungi in closed cavities has been often noticed. When milk is left a long time in the udder of the

cow, and forms a clot, these moulds are frequently found; they also find their way into the urinary bladder, the stomach, and lungs of man. Such anomalies may at first surprise us, but they may nevertheless admit of explanation, as the presence of the larvæ of the tape-worm in deep-seated organs, and even in the brain, which was so long a stumbling block to science.

The plan of organization throughout the vegetable kingdom presents this remarkable feature of uniformity—that the fabric of the highest and most complicated plants consists of nothing else than an aggregation of the bodies termed cells—every one of which, among the lowest and simplest forms of vegetation may maintain an independent existence, and may multiply itself indefinitely, so as to form vast assemblages of similar bodies. Hence, as definitely stated by Schleiden, it is in the life history of the individual cell that we find the true basis of the study of vegetable life in general.

In its most completely developed form, the vegetable cell may be considered as a closed membranous bag, or vesicle, containing fluid cell-sap: and thus we have to consider separately the cell-wall and the cell-contents.

The cell wall is composed of two layers, of very different composition and properties. The inner of these, which has received the name of *primordial utricle*, is extremely thin and delicate. Its composition, by the effects of reagents, is found to be *albuminous*—that is, it agrees with the formative substance of the animal tissues in every particular. The external layer (cell-wall) is usually thick and strong in comparison with the other, and may often be shown to consist of several layers; in composition it is nearly identical with starch. The typical form of the cell is either spherical or oval; but by pressure in growth cells assume almost every variety of shape. Cells are endowed with a peculiar *vital force*, by which they are capable of absorption and the elaboration of the absorbed matter, of growth, reproduction, and of secretion. One great fact which we would impress on the reader is, that each *cell* of a plant should be considered as having an independent or individual existence—that in one situation it may secrete colouring matter, in another starch, gum, sugar, oil, &c., and in another the material for the reproduction of its species.

We now proceed to consider the elementary tissues of animals, and see how far they correspond with those of vegetables. As there are many among the lowest orders of plants and animals in which a single cell constitutes the entire individual—each living *for* and *by* itself alone—so each

of the cells, by the aggregation of which any individual among the higher plants is formed, has an independent life of its own, besides the *incidental* life which it possesses as a part of the organism at large; so that the life history of the individual *cell* is, therefore, the very first, and absolutely indispensable basis, not only for vegetable physiology, but for the science of life in general. The first problem to be investigated is, "How does the cell itself originate?"

Schwann, in 1839, first applied the doctrine that each integral part of the animal body possesses an independent life of its own, in virtue of which it performs a series of actions peculiar to itself, provided that the conditions of these actions be supplied; yet it derived a new significance from the idea with which he connected it—that the integral parts are either cells, *or derived from cells*, and that their independent life is therefore *cell life*. This idea was based on the results of microscopic observations on the development of the animal tissues. For Schwann found that however diverse may be the structure and actions of the component parts of the animal organism in their fully developed condition, there is a period in its history when it is nothing else than an aggregation of cells, all apparently similar to each other; and as in some of the tissues—for example, in the blood—corpuscles, fat, cartilage, epidermis, epithelium, and the gray matter of the nervous centres, the cellular character is preserved through life. This was the problem which Schwann set himself to elucidate, and which it has been generally conceded that he did much to solve.

(*To be continued.*)

WORK NOT WORRY.

IT is not work that kills men; it is worry. Work is healthy; you can hardly put more upon a man than he can bear. Worry is rust upon the blade. It is not the revolution that destroys the machinery, but the friction. Fear secretes acids; but love and trust are sweet juices.—*Henry Ward Beecher's Life Thoughts.*

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Journal des Vétérinaires du Midi.

IDIOPATHIC EMPHYSEMA IN NEAT CATTLE.

By M. LAFOSSE.

ACCORDING to the author, emphysema of the cellular tissue has not been neglected by veterinary writers. But it is easy to convince oneself, on reading what has been written, that they only treat of consecutive symptomatic and traumatic emphysema. If they admit the possibility of essential, primitive, or idiopathic emphysema, none, as far as it is known, have given proofs of its existence. M. Lafosse, having met with three cases of this singular affection in a total of 16,000 heads of cattle, gives a succinct account of them, with remarks suggested by experience, and the therapeutical means adopted to combat it.

Etiology.—It has been found impossible hitherto to trace the cause of this affection. Neither the seasons, nor the diet, nor the service to which the animals have been subjected, can be considered to account for it. It occurred, in one instance, in an ox fed on dry food and green maize, in the month of October; in another, in a milch cow fed on dry provender and grains, in the spring; and the third was a cow in calf, fed on dry food in the stable and a little grass from the meadow during the day, she being turned out for this purpose. This case, at the time of writing this account, is still in the infirmary of the School of Toulouse.

During the whole time of the attack the first cow presented no other derangement. The ox, on the contrary, had a slight attack of enteritis, but this disappeared on the emphysema declaring itself. The last cow was in perfect health before the attack, and continued so for three weeks after, when her health became slightly deranged, which might be attributed to the treatment adopted for the emphysema.

Symptoms.—In the three cases which we have observed, the swelling began on the left side of the lumbar region; circumscribed at first, and afterwards extending to the quarters, the back, and the flank. It next spread to the right side.

In one instance only, in a cow, and which was seen for the first time fifteen days after the attack, had the swelling extended to the shoulder and the neck, and was more on the left side than in the two last-named regions. Nothing is so clearly defined as these emphysematous swellings. They present very little elevation, and the borders are but indefinitely marked; besides which their surface is at times slightly undulating; they are also crepitant, and somewhat moist. They are easily compressed by the fingers, without, however, leaving any impression like ordinary œdema. On passing the hand over these swellings, compressing them at the same time, not only is the sound of the gas distinctly heard, but there is also a bulging in advance of the direction of the hand, on the removal of which the parts resume their former shape. One would be led to think that it would be sufficient to puncture the swollen parts, so as to let out the gas, and thus reduce them; but this is not the case, for, however numerous the openings made in the skin, the emphysema still persists if recourse be not had to auxiliary means. This is owing to the greater density of the gas contained in the cellular tissue than the atmospheric air. On the other hand, it often happens that the cellular tissue fills again in a few hours after having been emptied, particularly at the beginning of the malady.

Duration and termination.—The total duration of the disease did not extend beyond a fortnight in the first two cases. In the third case, the incisions having been made at the commencement, they speedily closed, and the swellings had progressed considerably on the fifteenth day after the invasion. She got well at the end of a month. On the eighteenth day arthritis manifested itself in both hocks. This did not, however, retard the cure of the emphysema.

From the foregoing, one might be authorised in saying that if the emphysema were left to itself, it would extend, if not indefinitely, at least continue for a very long time, because, according to the appearance, the absorption of the gas effused into the cellular tissue would be very slow, and the quantity removed, if any, very small.

Physiology and pathology.—To arrive at a knowledge of the manner in which the gas had become effused into the cellular tissue, it was necessary to ascertain its composition. M. Laroque, professor of chemistry, undertook the analysis, and found its composition to be as follows: oxygen, 10; carbonic acid, 5; azote, or nitrogen, 85. This analysis, to the regret of the author, could not be depended upon as to the accuracy of the quantities. It shows that there exists a certain rela-

tionship between this gas and the air which is expelled from the lungs. But the absence of any lesion in the thorax, and of any difficulty in the respiration, does not indicate this to be the cause of emphysema. Is the gas exhaled by the vessels of the cellular tissue? Is it not possible that it arises from the digestive organs, and has penetrated into the cellular tissue, favoured by the permeability of this tissue? This permeability of the tissues to gas is admitted by certain physiologists, particularly by M. Liebig, the learned professor of Giessen, who thinks that part of the air taken in the food into the stomach finds its way into the lungs during the act of inspiration, and escapes from them by ascending the respiratory tubes. Whatever may be the talents of the learned professor, we may be allowed to doubt the correctness of this opinion until it is borne out by experiment. But supposing this to be the case, that the inspiratory power were sufficient to drive the air in the digestive organs towards the lungs, separated from them by only a thin partition, something more would be required to attract the same air to the cellular tissue just under the skin. Would that be done by the act of expiration? But why should not the air in the digestive organs be driven out by the natural opening by the same power? And how is it that emphysema is not of more frequent occurrence, for the ingestion of air is normal and constant?

No doubt the formation of the hitherto absorbed emphysema in the lumbar region, on the left side, which is in close proximity to the rumen, is a circumstance which operates in favour of the direct passage of the gas from that organ into the cellular tissue. If this gas had been analysed and compared with the analysis of that above stated, a favorable argument might have been the result; but, to the author's knowledge, this has not been done. The researches of MM. Gmelin, Lameyran, Frémy, and Lassaigne, have all been directed to the gas formed in indigestion; the carbonic acid, the sulphuretted hydrogen, and the carburetted hydrogen, have all been noticed; but in all probability they also exist, though in less quantities, in the natural state, although they have not been stated by Larroque in his analyses of the elastic fluids.

For these reasons, it remains very doubtful whether the emphysema which has been described is the result of a direct passage of the gas from the rumen into the cellular tissue. Let us now examine the question whether it comes from some exhalation. It seems to us much more probable that these fluids, whatever may be their cause, have been poured into the cellular tissue by the exhalants of the capillaries, consequent

on some disturbance in the cutaneous perspiration. The skin, it is well known, exhales carbonic acid gas and nitrogen in various proportions. These gases, as well as oxygen, enter into the composition of the blood. Might it not happen that, under the influence of some perspiratory derangement, the cellular tissue should exert some eliminating power as a substitute to that of the skin, and by that means pour into its cells a gas identical with that which the skin was to have discharged? This opinion has not only for support the analogy between the gases contained in the blood and the cellular tissue, but is also based on the general law, sympathetic and functional, existing between the organs of secretion, in virtue of which they assist each other whenever the performance of the function of one of them happens to be interfered with. We are strongly inclined to believe that this will be found a correct opinion.

Spontaneous emphysema in cattle has some analogy with certain varieties of "charbon" in the same species of animals. In fact, there are cases of this dangerous malady which declares itself by a subcutaneous emphysema. It is therefore not impossible to confound the two affections with one another at the time of their invasion; and it therefore becomes necessary to point out their differences. Ordinarily, charbon is preceded or accompanied by febrile symptoms. This is not the case in emphysema. In the latter, the skin also preserves its suppleness. In charbon it is dry and hard, and resounds like old leather. The gas in emphysema is inodorous; in charbon it has a fetid smell. Finally, the tumours in charbon, accompanied by emphysema, are variable in their seats, while the gas reaches to the most elevated parts of the body, and are also advanced towards the heart; while in spontaneous emphysema, up to the present time at least, almost exclusively, they begin at the lumbar region, from which they spread in all directions.

After the *début*, the symptoms are of the most serious nature in charbon. This is not the case in emphysema. When they remain constant, and are not in the least serious, there is no reason to doubt the true nature of the disease.

Treatment.—As the gas is not taken up by the absorbents, the indication seems to be the opening of a direct issue. To effect this object, scarifications are to be made, and even incisions, in the skin, on the most elevated parts of the tumours; compression is then to be made towards the openings, which will facilitate the liberation of the gas. To prevent the closing of these openings divers means have to be employed, such as reopening at different times, and even cauterizing the lips by the hot iron. Friction, with liniment of ammonia,

mustard, &c., is also very useful by creating slight inflammation of the skin. The enteritis which might precede or follow this affection is to be combated by the usual remedies. In one case no internal medicine was given, but in the two other sudorifics and diuretics were had recourse to. In the case complicated with arthritis the usual external applications were made to the parts.

Annales de Médecine Vétérinaire, Bruxelles, Jan., 1859.

ON CONGESTION.

By M. S. VERHEYEN, Professor, &c.

(Continued from page 161.)

CONTRACTILITY is a vital power, governed by the nervous system. Its manifestations cease as soon as the irritation is lost or withdrawn. In the dead body, when contraction does not assume the form of a motive power, it acts as an elastic force, and opposes the resistance of the lateral pressure of the blood. It does not discontinue to exert its power over elasticity in the same ratio as the blood progresses; but this vital function ceases at the capillaries, where the physical force of elasticity reappears. The parietes of the capillaries are formed of a very thin amorphous membrane, and are merely elastic. The contractility which pervades the minute branches of the arteries and veins, is completely lost in them. The experiments of the Brothers Weber have placed this question beyond all doubt. The capillaries dilate and return to their former calibre in consequence of the modifications which the heart, the arteries, and veins communicate to the circulation. The dilatation which this order of vessels receive in congestion is uniform and passive. The muscular fibres are very abundant in the small arterial divisions; nevertheless they are not susceptible of active expansion, but they contract and expand according to the actual state of nervous excitement; thus their tonicity may vary accordingly. The contraction of an artery lessens its capacity, thereby giving passage to a less quantity of blood, but the excess which has been propelled by the heart must find its way somewhere, by some collateral road which offers less resistance to its course. This phenomenon is illustrated by placing a ligature on an artery, in which case the collateral vessels become dilated from the pressure. Whenever there is a diminution of tonicity of the fibre, the coats of the

arteries become relaxed, and a larger quantity of blood is admitted than that which circulated through them before. The function of the muscular fibres is to regulate the distribution of the blood in the different parts of the organism, and to divide it according to the requirement of nutrition. The principle laid down by Henle is therefore correct, viz., that the motion of the blood is given by the heart, but that the repartition of the same is effected by the tonicity of the arteries. This tonicity, regulated by the great sympathetic nerve, is modified by the excitants which produce similar effects to those that provoke the nutritive sensation, from which two opposite states result, contraction or spasm, relaxation or atony—paralysis of the coats of the arteries.

The interesting experiments of Claude Bernard, which have been confirmed by all physiologists who have repeated them, have demonstrated the influence of *innervation* on the production of the phenomena of congestion. The section of the cervical branch of the great sympathetic nerve increases the temperature of the head on the side operated on, the arteries are dilated, and the capillaries become gorged with blood. By exciting the superior cervical ganglion, the contrary effect is produced—the arteries contract and the temperature decreases; but as soon as the excitation ceases, the hyperhæmia reappears. Galvanism applied to the great sympathetic will cause the arteries to contract so as to obliterate them (*Waller*). The contraction extends even to the small branches of the pia mater (*Donders*). Galvanism applied to the abdominal ganglia, when a section of the nerve has been previously made, produces similar effects of contraction and dilatation in the abdominal extremities to those before mentioned in the head (*Brown-Séguard*). The application of mechanical and chemical stimulants have the same effect as galvanism. They one and all lead to the exhaustion of the excitability and to atony. The vascular dilation is therefore a permanent effect, though it is indirect of the excitation (*Waller*). The section and stimulation of the nerve have not any effect on the calibre of the arteries, as Waller believes to have demonstrated. It is the more difficult to admit this result, inasmuch as, in contradiction with the organization of this order of blood-vessels, Weber has shown that the veins of one tenth of a line in diameter contract by the application of galvanism. Another experimenter (*Callenfels*) has seen the dilatation from the arteries transmitted to the veins. Is the nervous system of animal life able to excite or paralyse the tonicity of the vascular system in the same manner as the great sympathetic nerve? Does it give off vaso-motor nerves? It is a well-known fact that

the section of the trigemini nerve of the eye causes congestion and defective nutrition of the eye, the mucous membrane of the nose, the gums, and the tongue (*Herbert Mayo, Majendie, Longet*). Schiff having repeated these experiments, deduced from them that the vessels of these parts received their nervous supply from the trigemini instead of from the great sympathetic. This, however, is equivocal, and will remain so until it has been proved that the fibres of the trigemini, which go to the vascular parietes, emanate directly from the brain, and not from the ganglion of Gasser. According to the same author, the fibres of the vaso-motor of the face are given off from the par vagam. M. Chauveau (*Journal de Lyons*, p. 185), also asserts never having seen in the horse the fibres of the sympathetic communicating with the extremities of the arteries. The connecting chain of the great sympathetic with the cerebro-spinal system is pregnant with many important questions, of the solution of which we know nothing as yet. The physiological data seem to establish that the anastomosing branches which connect the sympathetic with the spinal nerves have a double origin. Fibres from the sympathetic accompany the spinal nerves on the outside; others take their origin in the cellules of the spinal ganglia and the spinal cord, and arrive at the sympathetic by motor and sensitive branches (*Kölliker*). This opinion, which is the most probable, is also applicable to the connexion between the sympathetic nerve and the brain. The destruction of the inferior facial of the cervical portion of the spinal cord, and the superior or dorsal portion, is followed by an increase of temperature and dilatation of the arteries. The excitation of those parts have a contrary effect—that of contraction. These experiments succeed only so far as the cervical branch of the sympathetic nerve is left intact. The same mutilation practised at the fifth or sixth dorsal vertebra causes the same effects on the arteries of the hind legs (*Budge, Schiff*). The results from these facts are, that the innervation of the vaso-motor has also its source in the cerebro-spinal axis, and that the sympathetic ganglia are not the only conductors. This interpretation is confirmed by the discoveries of Pflueger, that the galvanization of the inferior roots of the spinal cord determines a sensible contraction of the arteries. The spino-cerebral axis, therefore, shares with the sympathetic nerve the faculty of provoking the automatic and reflective movements in the involuntary muscles, viz., those of organic life. In fact, irritative hyperæmia is the consequence of any excitation on the nerves of sensation.

One may conclude from these facts that the fibres from

the great sympathetic nerve are the motors of the fibro-cells of the paretics of the arteries; that they maintain them in a state of permanent contraction and tonicity, and oppose an active resistance to the lateral pressure of the blood. Their section and segregation annihilate the nervous influx, and paralyse the elements of contraction in the same way as galvanization of the par vagum stops the movements of the heart, and galvanization of the abdominal fibres of the sympathetic nerve stops the contraction of the muscular fibres of the coats of the small intestines (*Pflueger*.) This resisting power to the lateral pressure of the blood being neutralized, the arteries yield to it like india-rubber tubes, and the capillaries become gorged with blood.

Artificial hyperhæmia presents the same characters as those produced by irritation; causing afflux of blood, increase of temperature, exudation, and no doubt also pain. Galvanization of the trigemini nerves provokes increased secretion from the salivary and lachrymal glands (*Ludwig*). The activity of the exosmose is the result of the atony of the vessels of these glands (*Kölliker*). The primitive effect of the contraction of the arteries consists in opposing an obstacle to the circulation; the blood then takes its course through the collateral branches, which expands in a direct ratio of the pressure exercised by the blood. The secondary dilatation caused by atony leads to the same results. The aggrandising of the diameter of the vascular tubes, in which the blood flows in greater abundance, increases the impulse and quickens it. Physiologists are of opinion that the enlarging of an artery retards the current of the blood. If, however, the pressure under which the arteries are placed, and also the phenomenon of adhesion, which is less in the arteries of a large diameter than in lesser ones, are considered, it will be perceived that the dilatation of an artery will tend rather to accelerate the circulation of the blood. This is in accordance with what takes place in the normal state of the circulation, in the aorta it being 400 to 1 to that of the capillaries. In congestion these last vessels become gorged with blood, the current of which becomes slow. On examining this by the aid of the microscope, in artificially congested capillaries, we perceive that the currents are not uniform, and the same division presents strong and feeble ones, which meet and check each other, and sometimes they retrograde. These obstacles impede the free passage of the blood into the veins. The unequal or abnormal repartition of the blood does not imply an increase of the same: partial anæmia

may exist at the same time with local hyperhæmia. The vascular spasm of the skin from the effects of cold—rigors—tends to anæmia, and the blood being thus thrown on the internal organs, produces in them a sort of plethora; and if the circulation is not speedily re-established, local congestions, more or less extensive, are the result. These positions demonstrate that the superabundance of the blood in the capillaries of an organ does not give a complete idea of congestion or active hyperhæmia; at least it does not give the difference between active and passive congestion. To establish a definition so as to justify this morbid state, other elements must be taken into consideration. The first question is—what is there active in this congestion? The contractile fibres do not actually dilate the blood-vessels. The blood is precipitated onwards, and this acceleration is caused by enlarging of the artery, produced by the atony of its parietes. In all this the defect in the resistance offered is manifest. From these facts active congestion is a phenomenon characterised by the accumulation of the blood, its acceleration into some organ being caused by a disproportion between the resistance of the arterial parietes and the lateral pressure of this fluid. The causes are: 1st. *a*, Obstacles to the free flow of the blood, as from partial spasm; *b*, compression; *c*, from foreign bodies in the blood circulating with it, these being of too great bulk for the capillaries, and which are consequently obstructed by them, such as the agglomerated corpuscles of purulent matter. In these cases the circulation is increased in activity in the collateral branches from the impulse given to it.

2dly. The non-resistance of the vascular parietes, which yield to the normal pressure of the blood. Softening, or fatty degeneration, will cause the loss of elasticity and contractility, when a slight acceleration of the circulation will produce not only a dilatation, but sometimes a rupture of the vascular parietes. Internal hæmorrhages have generally for their cause a want of integrity in the tunics of the blood-vessels.

3dly. The atony of the vascular system, caused by the excitation of the sensitive nerves, producing paralysis of the vaso-motor nerves. This condition comprehends a large category of irritating causes, internal as well as external.

(To be continued.)

THE VETERINARIAN, MAY 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

IMPORTANCE OF CO-OPERATION.

INDIVIDUALLY, perhaps, but little can be done; collectively, much. Man does not live for himself alone. Much of happiness, much of intellectual enjoyment, much of mind-progress, arises from the social element of man's constitution. There is that which chills in solitude. From the beginning it was found not good for man to be alone. Truly has it been said that, "the beautiful is doubly beautiful to eyes which see other eyes looking upon the same landscape; especially if the hearts that feel the light of those eyes are concordant and friendly. We cannot read a fine verse or paragraph without wishing to share its glow with other hearts; nor find a star, but we must show it to our best friend. We are receiving creatures—imparting creatures; we know nothing of property in thought—we never hoard—we give away. We are poor in mind when shut out from others; we are rich in mind, and rejoice instinctively in its influence, when thought meets thought, and they quarry and build together, or when like gleeful harvesters they bind the sheaves together. * * * * * The basis of all social joy is not exact coincidence of opinion, but a congeniality of spirit, and a hearty mutual concurrence on the great ideas which make up the sum of life. There need not, indeed, be union; often it is better there should not be. There must, however, be harmony; there must be a key note from which all distances measure themselves, and in which the strain comes to its conclusion, or there will be discord."

The reason why so little is accomplished frequently arises from this want of harmony, since to obtain an object it is only necessary that a definite plan be laid down and steadily persevered in. To will to do a thing is more than half to

accomplish it. On this account it is we have been advocates for the members of our profession associating together for the consideration of those subjects which affect their common interests, and until such a spirit of co-operation becomes general we have but faint hopes of the profession being what it ought to be. "Divide et impera," is a Machiavelian policy. The want of union in a community becomes a source of weakness, while its presence indicates strength, and enables it to govern and direct its affairs for the general weal. "Two are better than one," says the Wise Man, "because they have a good reward for their labour."

We have before commended our transatlantic cousins for forming themselves into societies for the consideration of veterinary matters, and had hoped ere this to have reported their progress, having received promises to that effect; but for a short time there is a suspension in the action of the Atlantic cable, the sympathetic cord that unites the two hemispheres.

Now we have to congratulate our professional brethren in the north for having taken the lead in uniting themselves into a society for the same object. We anticipated that in the metropolis of the empire an association of the kind would have taken place ere this, and have urged it again and again. In like manner, however, similar propositions made by others have fallen unheeded. All this is to be regretted. Yet we feel no jealousy whatever in Glasgow having the honour of precedency, since it is clear that the members of the *West of Scotland Veterinary Medical Association* do not intend to hide their light under a bushel, but by giving publicity to their debates—and the pages of our Journal shall ever be open for their insertion—to benefit the profession as a whole; which should be the uniform object of all. The day is gone by for exclusiveness; and those misread the times who now attempt its introduction. It is a thing long since buried in the abyss of the past, and only to be referred to with wonder and pity as a relic of by-gone days, when knowledge being restricted to the cowl and the cloister, the intellectual powers were "cribb'd, cabin'd, and confin'd" by custom and fear lest others should know as much as they did. "Light," we

are told, "is sweet, and a pleasant thing it is to see the sun ;' but light in a dark lantern is of little use. Almost as soon should we expect to come in contact with some of the resuscitated silurian monsters, or a group of mammoths luxuriating in a mud-bath, as a company of exclusives in the nineteenth century ! The world has grown wiser of late, and we heartily rejoice at the efforts being made to disseminate knowledge, and sincerely wish its promoters all the success they merit on that account. We therefore heartily concur with the following observations made by Mr. Cowie, M.R.C.V.S., in an address delivered by him at a meeting of veterinary surgeons held last year in Aberdeen, wherein he says, " I understand that you propose to form an association among yourselves for professional objects. If you wish it to succeed (and it can only do so by its being made the instrument of *practical* good to its members), you must each contribute his quota of experience, relating from his note-book unfortunate as well as fortunate cases ; and by discussing with candour, and in a friendly spirit, the cases brought under your review, you will constitute yourselves a sort of consulting conclave, which will be highly beneficial in making you wiser men and more enlightened practitioners."

We fear that it is forgotten by too many that every member has a duty to perform, and each has his proper place allotted him. There is wanting among us the feeling of a mutual interest and concern. It is in the professional body as in the natural—all the members are in some respect necessary and useful to each other, and thus no one can say to the other " I have no need of thee." There must also be distinctive functions performed by each, or there will be confusion. Nevertheless, the feeblest member is of worth, not the least of which is that the highest cannot do without it ; hence there results a reciprocal dependence.

"What is man,
If his chief good and market of his time
Be but to sleep and feed?—A beast!—no more.
Sure, He that made us with such large discourse,
Looking before and after, gave us not
That capability and god-like reason
To rust in us unused."

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING, MARCH 23, 1859.

PRESENT: Messrs. Braby, Cartledge, Cheeseman, Cherry, Ernes, Gamgee, Hunt, Jex, Robinson, Stockley, Wilkinson, Withers; Professors Simonds and Morton, and the Secretary.

On the motion of *Mr. Ernes*, seconded by *Mr. Jex*,

Mr. Vice-President CARTLEDGE took the Chair.

The minutes having been read and signed, a letter was read from the President, Professor Spooner, announcing the resignation of his office, when

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Robinson*—

“That the President’s resignation be not accepted.”
Carried.

It was moved by *Mr. Stockley*, and seconded by *Mr. Hunt*—

“That a deputation, consisting of Messrs. Stockley, Wilkinson, Robinson, Cartledge, Hunt, and the Secretary, wait on Professor Spooner, to request him to reconsider his decision, and to withdraw his resignation.” Carried.

By order of the Council,

E. N. GABRIEL, *Secretary*.

QUARTERLY MEETING, APRIL 6, 1859.

PRESENT: Messrs. Braby, Burley, Cherry, Dickens, Ernes, Field, Gamgee, Greaves, Hunt, Legrew, Pritchard, Stockley, Turner, Wilkinson, Withers; Professors Simonds, Morton, and Varnell, and the Secretary.

On the motion of *Mr. Ernes*, seconded by *Mr. Cherry*—

Mr. Vice-President HUNT took the Chair.

The minutes of the preceding meeting having been read and signed,

The report of the deputation appointed to wait on Professor Spooner was given in. It stated that the deputation

waited on Professor Spooner the morning after the last meeting of Council, when that gentleman was pleased to withdraw his resignation.

The election of a member of the Board of Examiners was then proceeded with.

Professor Simonds moved, and *Professor Varnell* seconded the motion—

“That Mr. W. Mavor be elected a member of the Board of Examiners.”

It was moved by *Mr. Field*, and seconded by *Mr. Turner*—

“That Mr. Pritchard be elected a member of the Board of Examiners.”

On the ballot being taken, Mr. Pritchard was declared duly elected.

On the motion of *Professor Varnell*, seconded by *Mr. Field*—

“Mr. J. R. Cox was proposed as one of the Auditors for the past year;” and on the motion of *Mr. Cherry*, seconded by *Mr. Gamgee*, “Mr. W. Field, jun., was proposed as an Auditor of the past year’s accounts.”

On the ballot being taken, these gentlemen were declared duly elected.

It was moved by *Messrs. Wilkinson* and *Cherry*, and seconded by *Messrs. Pritchard* and *Dickens*—

“That Messrs. Withers and Legrew, and the Secretary, be appointed on the Annual Report Committee.” Carried.

The Quarterly Balance Sheet was read. It showed a balance in hand of £211 16s. 5d.

On the motion of *Mr. Cherry*, seconded by *Mr. Ernes*, it was received and adopted.

The Registrar’s report announced two deaths during the quarter: H. Hubbick, of Durham, passed in 1853, and George Dale, of Camberwell, passed in 1839.

Cheques were ordered for the current expenses of the year.

By order of the Council,

E. N. GABRIEL, *Secretary*.

SPECIAL MEETING, APRIL 20, 1859.

PRESENT: Messrs. Braby, Cartledge (Vice-President), Cherry, Ernes, Hunt (Vice-President), Legrew, Wilkinson, Withers, and the Secretary.

On the motion of *Mr. Ernes*, seconded by *Mr. Cherry*—

Mr. Vice-President HUNT took the Chair.

The minutes of the preceding meeting having been read

and signed, a letter was read from Mr. Pritchard, returning thanks for the honour of his election; another from Dr. Struthers, of Edinburgh, offering his services to the Scotch portion of the Branch of Examiners; and one from Mr. John Gamgee, announcing his having received the warrant bearing the Sign Manual of Her Majesty for the recognition of the new Veterinary School in Edinburgh.

It was moved by *Mr. Ernes*, and seconded by *Mr. Braby*—

“That the Secretary be directed to obtain official corroboration of the same from the Home Office.” Carried.

A report was received from the Solicitors to the College, on a question submitted to them, and its consideration was ordered to be postponed to the next Quarterly Meeting.

The Annual Report or Abstract of the Proceedings of the Council, and the Annual Balance Sheet, having been read,

It was moved by *Mr. Ernes*, and seconded by *Mr. Cartledge*—

“That the Annual Report and Balance Sheet be received and adopted.” Carried unanimously.

By order of the Council,

E. N. GABRIEL, *Secretary*.

Veterinary Jurisprudence.

SALISBURY COUNTY COURT.

THE monthly sitting of this Court took place on February 23d, before E. EVERETT, Esq., Judge.

Ambrose Dennis Hussey, v. John Coleman, V.S.

OSSIFIED CARTILAGE.

This was an action to recover the sum of £35 10s. 1d., the difference arising from the sale of a horse which the plaintiff, a gentleman residing in New-street, had purchased of the defendant, a veterinary surgeon, carrying on business, in Endless-street, in this city. Mr. H. J. Swayne, barrister (instructed by Messrs. Hoddings, Townsend, and Lee) appeared for the plaintiff; and Mr. W. K. Norris, solicitor, of Devizes, represented the defendant.

The following gentlemen were sworn on the jury: Mr. John Marsh (Foreman), Mr. William Henry Woodcock, Mr. T. F. Newton, Mr. John Fleetwood, and Mr. Henry Targett.

Mr. Swayne having stated the facts, and pointed out the law bearing on the case, called *Mr. A. D. Hussey*, who said—I am the plaintiff in this action. On the 5th November last, Mr. Coleman offered to sell me a bay-mare. I asked him to allow me to ride her with the hounds the following day. He said she was so fat that I should not be able to see any sport with her. I rode her to the meet at Winterslow to try her.

On the following Monday I agreed to buy her at £60, Mr. Coleman warranting her perfectly sound. I observed that the off fore leg was not so fine as the other, but Mr. Coleman said it only arose from want of exercise. On the 12th, I gave him a cheque for £60, and he handed me a receipt and warranty. (The warranty was put in and read). I hunted the mare about once a week, and she was always more or less lame on the following morning. I also observed that she pointed the off fore foot when standing in the stable. On the 14th January I wrote to Mr. Coleman requesting him to take her back, but as he refused to do so, she was sold at the repository on the 25th.

Cross examined—I did not ride her back from Winterslow on the 6th. I heard that Mr. Coleman had the mare for sale, and I sent my groom to say that I should like to look at her. I did not ride her for some little time after the 6th, as I was away from home. I am not certain whether I rode her at all during the week. She was exercised by the groom in accordance with my instructions. I instructed him to test her jumping. The groom told me she fell lame on the 3d December, as he was leading her down Castle-street. I had her shoes removed, but did not then call in a veterinary surgeon. I did not then make any complaint to Mr. Coleman. She was afterwards exercised and hunted as usual. I hunted her about eight times whilst she was in my possession. A friend of mine also rode her once or twice. I rode her to cover, where, of course, there were stools and stumps. I did not jump her much—there was not much jumping to be had. I had one good run with her—from Vern Ditch to Martin Wood. The run lasted two hours, but it was only fast for about half an hour.

Mr. Norris—Did the mare fall with you at any time into a ditch?

Mr. Hussey—Never.

Mr. Norris—Then she was a clever jumper?

Mr. Hussey—There was nothing remarkable in her jumping. I know that heavy frost set in shortly after I bought her. She was regularly exercised on the turf, by my groom, during its continuance.

Mr. Norris—Didn't he ride her on the road?

Mr. Hussey—Only at a walking pace. I frequently examined her legs before I rejected her. During the interval Mr. Coleman was attending another horse in my stable, and I told him I was afraid of one of the mare's legs, as it was not so fine as the other. I did not use her so much as I should have done if her legs had been all right. It could not have been on the 3d December that I spoke to Mr. Coleman, as I was not in Salisbury on that day. Horses' legs fill from many causes. They will fill as much when they have not sufficient work, as when they are overworked.

Mr. Norris.—What description of filling was it—was it a filling from the fetlock-joint up the leg?

Mr. Hussey—Yes.

Mr. Norris—When high-conditioned horses have not much work, do not their legs always fill?

Mr. Hussey—Yes, but not one leg more than another. I did not have any examination by a veterinary surgeon until I made up my mind to return the mare.

Charles Hewett—I am groom to Mr. Hussey. I fetched the mare in question from Mr. Coleman's about the 8th November. Mr. Coleman said "Groom, you have a bargain." I replied, "I hope so, sir." Mr. Coleman put his hands down her legs, and said "She has the best legs of any horse I ever saw in my life." I observed, that the off fore leg was not so fine as the other. I asked him if that was anything round

the hoof, and he said "No ; I'll warrant it a perfectly sound foot and leg." He added that the fulness arose from want of exercise. I fancied there was a little enlargement between the hoof and hair. After I took her home, and she was in the stable, I observed that she was always pawing the straw from under her. I saw her pointing the off fore leg. I had directions to exercise her, and did so. About a fortnight afterwards, whilst leading her down Castle-street, I observed that she went crippling. On getting home I went for Perman, the blacksmith, who took her shoe off and pared the foot. I bathed the foot, as there was a great deal of heat. I remember meeting Mr. Coleman a short time afterwards. He asked me how the mare went on, and I told him what had happened. He said it must be a bit of a wrench from stepping on a rolling stone, as he had never known her lame before. Mr. Hussey hunted her about a fortnight afterwards, and she was very lame when he returned. She was very lame on the 14th January, and I went for Mr. Coleman. I pointed out the enlargement of the off fore foot, and asked him what caused the lameness. He said it was enlargement of the bone, but that was not the cause of the lameness. He did not say what was the cause of the lameness. After having some conversation with Mr. Hussey, Mr. Coleman came into the stable and told me to get the shoe taken off, and to poultice the foot. He said he would come next morning, and bleed it in the toe. Mr. Hussey wished him to take the mare back, but he said he didn't choose to do so. By Mr. Hussey's instructions I went for Mr. Truckle, who came and examined her. She was afterwards sold at the repository.

Cross-examined—The filling of the leg was in the back sinew.

Mr. Norris—Won't high-conditioned horses always paw the foot as you have described ?

Witness—Yes, and low-conditioned ones too, if they are not sound. (Laughter.) I rode her for exercise every day when she was not hunted. Mr. Coleman wished me to jump her, as she was not used to it, and did not take her leaps properly. I generally exercised her from Dogdean Farm to Homington Down.

Mr. Norris—Is that stony ground ?

Witness—I call it turf myself.

Mr. Norris—But you couldn't always ride on the turf.

Witness—Not when I came to a turnpike road, of course. Dogdean Farm is about $2\frac{1}{2}$ miles from Salisbury. She was a very pleasant mare to ride.

Mr. Norris—Full of cheerfulness and spirits ?

Witness—Well, there ! she was cheerful. I exercised her where I thought proper, but during the frost I did not go out until the sun was high. I then found some fallows which were soft enough for the purpose. Perhaps I had half a mile to go before that. I never rode the mare out of a walk on the road during the frost. I might sometimes have gone into a trot.

Mr. Norris—Or sprung into a gallop ?

Witness—Not very likely. Can you prove that I ever galloped a horse on the road ? (Laughter.)

Mr. Norris—No, I have never seen you on horseback yet. Where had you been when you say the mare fell lame in coming down Castle-street ?

Witness—I had been to Old Sarum, just to work off the physic which the mare had had.

Mr. Norris—Where did you get the physic ?

Witness—I know where I got it. Not from Mr. Coleman's—he had nothing to do with the mare. He wished me to get her some physic.

Mr. Norris—When?

Witness—I can't say—it was some when.

Mr. Norris—But I want to know.

Witness—Then I can't tell you. (Laughter.)

Mr. Norris—Do you consider that exercise is a good thing to cure a lame horse.

Witness—I thought a little exercise would do her more good than standing still. After she was a little warm the lameness went off. Mr. Hussey didn't want me to draw his attention to the lameness; he could see it himself. I told Mr. Coleman of the lameness in Mr. Hussey's stable, where he was attending another horse, and he then replied that she had good legs. I said she was always pointing, and that the off fore leg was never so fine as the other. I asked him what that was between the hoof and hair, and he replied "Enlargement of the bone."

James Ackhurst, coachman to Mrs. Hussey, said he saw the mare pointing the off fore foot—that was after the Castle-street affair. As he had nothing to do with Mr. Hussey's horses he did not interfere.

Owen Perman, blacksmith, said he saw the mare in question when he happened to be at Mr. Hussey's shoeing. Mr. Coleman was there at the time. Witness looked at the mare's feet and said he didn't half like them. She was very low and weak at the heel, and one foot was smaller than the other. He asked Mr. Coleman who had shod her, and he said it had been done by a country smith. Mr. Coleman said if the shoes were made a little wider in the cover, and rather thicker at the heel, she would go better. Witness observed that she stepped very short on the off fore leg. When he shod her he found that she had ring bone. There was a good deal of heat. He considered the foot diseased, and from his experience he believed the disease to have been of long standing.

Cross-examined—There was a carriage horse ill at the time of the conversation, and Mr. Coleman was attending it. Witness took up the mare's feet, and showed them to him.

Mr. Norris said he should be able to prove that Mr. Coleman was not at Mr. Hussey's until after the Castle-street affair.

Re-examined: He never shod the mare before. Mr. Hussey had his horses shod once a fortnight or three weeks, according to the wear.

Mr. J. C. Truckle—I am a member of the Royal College of Veterinary Surgeons. I was called in on the 15th of January to see a bay mare at Mr. Hussey's stables. She was shown to me by Hewitt. The first thing that struck me was pointing of the off fore foot. I had her turned round, and put my hand down her legs to examine her. I then detected ossification of the lateral cartilage on the outside of the off fore foot. By unprofessional men this would be called ring bone, or side bone. On trotting her out into the yard, I found that she was lame on both fore feet, particularly the off one. When a horse is lame in both feet, the lameness is not so easily detected. I have seen a great many cases of ring bone. I think hackneys, which are always ridden on hard roads, are most liable to it. Ossification generally takes place where the cartilage is attached to the bone—that is inside the hoof, out of sight. It is in the majority of cases a slow process.

Mr. Swayne—Looking at this enlargement, do you think it could have come to such a size in two or three months?

Mr. Truckle—I think not. I examined the mare again, in company with Mr. Aubrey, on the 21st of January. I then made a more careful examination. She was pointing still—particularly the off fore foot. I had her outside, and measured her feet in the best way I could, with my eye and finger. The off foot was considerably contracted, the result,

in my opinion, of navicular disease. I do not think the disease had come on recently.

Cross-examined—I am of opinion that she had chronic navicular disease in both feet. Lameness is not always a necessary consequence of chronic navicular disease. As a hunting horse, it might be disagreeable to ride. I have been a member of the College, and in the profession, five years. I served an apprenticeship at Quidhampton, with Mr. Daniel Tabor. I gave a written certificate of my examination, but do not think that I used the word “lameness.”

The certificate was put in and read. It was as follows :

“This is to certify that I have this day examined a bay mare for A. D. Hussey, Esq., and do pronounce her unsound, and must have been so at the time of purchase, from ossification of the lateral cartilage on the outside of the off fore leg.

“J. Truckle, V.S.,

“Bridge-street, Salisbury.

“January 15th, 1859.”

Mr. Norris—What is the predisposing cause of ossification of the cartilage?

Mr. Truckle—Concussion.

Mr. Norris—That is fast galloping?

Mr. Truckle—Not of necessity. Of course there is concussion when a horse gallops. I never go out hunting, and therefore cannot say whether it is the practice for parties to pull up when they come to roads. In riding through a cover a horse may strike its legs against stumps or stools. It is not an unlikely thing. If the blow was hard enough it might lead to inflammation.

Mr. Norris—And would not inflammation affect the periosteum?

Mr. Truckle—There is no periosteum over the lateral cartilage.

Mr. Norris—As a professional man, do you mean to tell me that there is no periosteum there?

Mr. Truckle—I do. You are not well up in anatomy. (Laughter.)

Mr. Norris—We lawyers don't understand your medical terms. What is it, then—the perichondrium?

Mr. Truckle—That is more like it. When passing over bone it is called the periosteum; when over cartilage, the perichondrium.

Mr. Norris—I shall learn something by and by. Well, does inflammation of the perichondrium invariably terminate in ossification of the cartilage?

Mr. Truckle—Frequently it does. It all depends whether the patient is subjected to treatment. If left to nature, you may get ossific matter; if medical treatment is resorted to, it may be averted. I cannot at this moment, bring to my mind a case of rapid ossification.

Mr. Norris—How soon have you known a splint develop itself and become ossified?

Mr. Truckle—I have never made any notes on the subject.

Mr. Norris—Have you not known a splint become completely ossified within a month?

Mr. Truckle—No. I do not say it cannot be—it is possible, but not very probable. I have never known, in cases of broken bone, such a union formed that the limb might be used in less than a month.

Mr. Norris—Is it possible?

Mr. Truckle—Break a man's leg, and see how long it will be before he can get up again.

Mr. Norris—That may be. But let me ask you whether you con-

sider it possible that ossification might take place, and perfect itself, within a month.

Mr. Truckle—I do not say it is impossible.

Mr. Norris—Is not the lateral cartilage that part of the foot which springs from the heel and passes round towards the foot, serving somewhat as a tight bandage to keep the coffin bone in its place?

Mr. Truckle—Not at all. It is situated on the superior and lateral parts of the coffin bone. It expands when weight is thrown upon the leg, and tends to ward off concussion. Ossification is a transformation of cartilage into bone.

Mr. Norris—When you examined this mare did you find that the cartilage had actually turned into bone?

Mr. Truckle—Yes. There might, perhaps, be a quarter of an inch at the extreme edge not completely ossified. It did not yield to the touch. Ossifications never become regenerated or restored to their natural condition.

Mr. Norris—If you were to find that the cartilage of this mare is not completely bone at this time, what would you say?

Mr. Truckle—I am sure I should find it bone. No man could ever make me believe it to be cartilage. Ossification is not likely to be produced by any sudden straining or action of the joint. It would doubtless be an exciting cause. There may be ossification without inflammation of the pericondrium. What Blaine describes as exostosis is not the same thing. Exostosis is a morbid growth of bone from bone. It is altogether a different thing from conversion of cartilage into bone. Horses that are always ridden are most likely to have ossification of the cartilage. I should not think it would be produced by a blow on the cartilage from the groom. A sufficiently hard blow would produce inflammation of the perichondrium, and the result might, or might not be, ossification. I have heard that 99 out of every 100 dray horses in London are subject to this disease, but I do not believe it. I did not put a tape round the mare's feet—the contraction was visible enough to the eye.

Mr. Norris—And once a contracted foot, I suppose always a contracted foot?

Mr. Truckle—The feet may be pared down to match—there is so much dodging in these cases (laughter).

Re-examined—*Mr. Norris* would not allow us to inspect the mare this morning, to see if bone has come back to cartilage (laughter). Ossification does not, of necessity, produce lameness. A horse suffering from ossification may not go lame for years. If only used on soft ground probably it would never be lame. A horse with high action is most liable to have ossification.

Mr. Thomas Aubrey—I am a member of the Royal College of Veterinary Surgeons. I examined this mare, in company with *Mr. Truckle*, on the 21st of January. What *Mr. Truckle* has stated is correct. As a rule, ossification is a disease of very slow progress. It may, or may not, be preceded by inflammation. The transformation generally begins at the lower part of the foot, out of sight. Within the last three years nine or ten cases of ossification have come under my notice, and although some of them have been going on at least two years, not one of the cases is so bad as that of *Mr. Hussey's* mare. As to the navicular disease, my opinion is that it was of some standing, and for this reason—both feet were contracted, and it is not often that both feet are diseased at the same time. The disease generally affects one foot, and then the other. Contraction of a horse's foot is a slow process. It is the effect of lameness, not the cause.

Cross-examined—Navicular disease gives pain and causes pointing.

Mr. Norris—Can there be navicular disease without inflammation of the synovial membrane?

Mr. Aubrey—Professor Spooner, of the Royal Veterinary College, says there may be. He gives it as his opinion that the disease may commence in the structure of the bone. If a horse affected with navicular disease in both feet were sold to an unprofessional person, it might go on for some time without his detecting it, particularly if the animal were not subjected to severe exertion. An experienced person would at once detect it—there would be something remarkable in its action: it would step short and stumpy.

Mr. Norris—How long has ossification existed in this mare?

Mr. Aubrey—In my opinion, for some months before its sale to Mr. Hussey.

Mr. Norris—Have you ever found ossification complete in a very short period?

Mr. Aubrey—No. Ossification is a very different thing from the deposition of bone on bone. In the latter case an enlargement is thrown out, which to an unscientific person appears to be bone in five or six weeks, and may be cut with a knife. Still it is not bone, although it will ultimately become converted into bone. Exostosis is only a growth of bone on bone; ossification is the transformation of cartilage into bone. I never knew cartilage transformed into bone within a month. It is impossible for a broken bone to unite within a month or six weeks. That which forms the union is not bone then.

Mr. W. C. Spooner, of Southampton, author of a well-known work on the horse, was next called. He said, I have heard the evidence of Mr. Truckle and Mr. Aubrey, and mainly coincide in their opinions. If I had been called in to see a lame horse, and found it pointing, I should be led to infer that it was suffering from navicular disease. Pointing is a symptom of that disease.

Mr. Swayne—May a horse have navicular disease, and yet, with moderate use, and go lame?

Mr. Spooner—Certainly. Frequently such lameness is not noticed by an ordinary observer. I know the work of Mr. Percivall. He has a very good reputation. He gives a very good account of the symptoms of navicular disease, when he says: "Were a person a hundred miles off to write a letter to a veterinary surgeon, saying, 'My horse goes lame, and I can discover no cause or semblance of cause whatever for the lameness; there is nothing particular to be observed in his action to lead to a belief that it is shoulder lameness; once or twice he has through repose become sound again, though lameness has not failed to relapse every time he has been returned to work again; and in the stable, and often out of the stable, the horse points his lame foot.' I say, were a person to write thus concerning his lame horse, any veterinary surgeon to whom he wrote might, in his own mind, without any great apprehension of being mistaken, set the case down as navicularthrititis."

Mr. Swayne—With regard to ossification of the lateral cartilage—is that a quick or a slow process?

Mr. Spooner—Slow.

Mr. Swayne—Is a horse sound that has navicular disease?

Mr. Spooner—Certainly not. Any alteration in the structure of a horse that interferes, or is likely to interfere, with its utility, is unsoundness. Ossification of the lateral cartilage would interfere with its utility.

Mr. Swayne—My learned friend wouldn't let you see the mare this morning, would he?

Mr. Spooner—No, I went to the stable door, but was refused admittance (laughter). From what I have heard in evidence as to the size of the enlargement, it must necessarily have taken some time to form. Ossification generally begins in the hoof, where it is not visible. Contraction of the foot is generally a slow process. It is more frequently the effect than the cause of navicular disease. I still adhere to the statement made in my work, that “A horse may point from corns, or from other injury at the posterior part of the foot, but then this pointing is different from that of navicular disease. In the latter, the foot is generally set out straight; in the former, it is not extended so far, but the heels are more elevated. In the former, the animal having put his foot in the easiest position, turns his attention to other objects; whilst in the latter, the solicitude of the horse is evidently directed more continually to the part.”

Cross-examined—A horse would not point, in the sense in which true pointing is understood by professional men, except from navicular disease. The probability is that if it pointed from some other cause, that cause would be quickly found out. If there was a bruise in the foot, for instance, the pointing would be very different. A sprain of the sinews would not cause a horse to point. Lameness may, or may not, accompany an alteration in structure. Ossification may be completed in a few months, and it may take much longer. Where it occurs in a short period, there must be much active inflammation going on. If the lateral cartilage yields to manipulation, it cannot be completely ossified.

Mr. Norris—Partial ossification might take place in a month or six weeks, I suppose?

Mr. Spooner—The moment there is a speck of ossific matter, ossification has begun. It takes some months to complete. Ossification of the inferior cartilage might cause mischief without its being noticed. Dray-horses are more susceptible of ossification than others. It is generally a much more serious matter in horses employed in faster work. There is such a thing as hereditary predisposition to ossification. I should call ossification unsoundness, even without lameness. Ossification scarcely ever occurs from outward pressure. Hunting horses are not so subject to navicular disease as those on turnpike roads. Since the discontinuance of coaches, navicular disease is far less prevalent than formerly. Ossification may commence and go on for a long period without being observed. It may not, perhaps, be noticed until lameness comes on. Lameness does not necessarily arise from ossification of the cartilage.

By the *Judge*—Ossification would be more or less quick in proportion to the acuteness of the inflammation. In cases of ossification, the cartilages which ought to yield no longer yield; the superincumbent weight of the animal produces pain, and lameness, which is the language of pain, ensues.

This was the plaintiff's case.

Mr. Norris submitted that there was not sufficient case to go to the jury. *Mr. Hussey* said he found the mare to be lame at first, but yet he retained possession of it for nearly three months without making any complaint. He thereby adopted the animal, with whatever defects she might have.

The *Judge* said *Mr. Hussey* might have adopted it so far as to be unable to return it; but the second rule of law was this—that if a man brought an action for the price which had not been paid, evidence of breach of warranty might be given in diminution of damages. The question appeared to him to be one of evidence and not of law.

Mr. Norris then proceeded to address the jury for the defendant. He complained that the usual courtesy of the profession had not been observed by the other side, in not giving him notice of the engagement of counsel, so that defendant might have obtained the like assistance. He was satisfied, however, that the court and the jury would not permit the interests of his client to suffer through the feebleness of his advocacy. The evidence which had been given had filled him with astonishment, for the mare had been in the possession of *Mr. Coleman* for a year and a half before she was sold to *Mr. Hussey*, and he should be able to call witnesses of the highest character, who would entirely and positively rebut the inferences which had been attempted to be established. *Mr. Coleman* would scorn the action of knowingly selling an unsound horse to any one. His intention was to have kept this mare for his own use, and he would never have thought of parting with her if *Mr. Hussey* had not applied to him. Whatever the result of the case might be, *Mr. Coleman* honestly believed that at the time he sold her the mare was as sound as any horse in England. He did not intend to deny that she had side-bone at this moment, but he believed he should be able to prove that it must have arisen whilst in *Mr. Hussey's* possession, seeing that even now it was only in an incipient state. He also contended that *Mr. Coleman* could not be reasonably expected to suffer loss, after the mare had been kept without complaint for eleven weeks, during which time the plaintiff and his groom pretended to have been aware of its defects.

Mr. John Coleman, the defendant, was then examined. He said—I remember *Mr. Hussey's* groom coming to me early in November last, respecting the purchase of the mare in question. I took her down to *Mr. Hussey's* stables, and he asked me if I had any objection to his riding her to Winterslow to meet the hounds. I said I had not. She was brought back to my stables in the evening. *Mr. Hussey* told me he had ridden her to cover with the hounds. I made the deal on the following Monday, and received a cheque for the £60 towards the end of the week. In consequence of the negotiation with *Mr. Hussey* I examined the mare as to soundness. She was then quite sound. She was delivered to *Mr. Hussey's* man on the 8th November. I believe I saw him, but what he has stated with regard to the conversation between us is incorrect. He did not say a syllable about the enlargement or filling of the leg. I am quite prepared to state that there was no enlargement at that time. Shortly after the sale the frosty weather set in, and during its continuance I saw the mare exercised on the hard road. I was at *Mr. Hussey's* attending a carriage horse every day from the 3d December to the 9th, but I heard no complaint whatever about the mare. The groom told me she fell lame coming down Castle Street, and on examining her I found a little heat round the coronet. I said she had most likely stepped on a stone, and accordingly ordered the foot to be poulticed. On the following day the mare was very well, and went out for exercise. From the 9th December so the 14th January, I was not at *Mr. Hussey's* stables at all, and I received no intimation that the mare did not answer the terms of the warranty. On being sent for, I examined her on the 14th January; and found a little ossification going on in the lateral carriage. *Mr. Hussey* assented to my treating her as his own. I should have bled her in the toe on the following morning, if *Mr. Hussey* had not, in the evening, sent to say that he preferred letting her alone for a few days. A man might lame the best horse in the world in one day. On the Monday following this interview I again saw *Mr. Hussey*, and he wished me to take the mare back. I declined to do so, on the ground

that she was perfectly sound when I sold her. A few days afterwards I received a communication from Messrs. Holding, stating that if I did not take her back she would be sold at the repository. She was sold, and an agent of mine became the purchaser. She had been in my possession since last June twelve months, and I never observed anything the matter with her. She was for some time in my father's keeping at Tilshead, and was regularly worked to the saddle—sometimes 40 or 50 miles a day. She was sent to Salisbury about a fortnight before I sold her. The cartilage was very elastic when I examined her on the 14th of January, and there is little doubt it is cartilage still. There is very little ossification.

Cross-examined—The cartilage still yields to pressure. It does not yield quite so much as it did. The whole of the cartilage is not absorbed, but perhaps more than half. I never had any conversation with Perman relative to the case. Mr. Truckle and Mr. Aubrey are certainly dreaming if they say the mare is suffering from navicular disease. I told the groom the enlargement was the cause of the lameness. Mr. Hussey said the leg filled, and I replied that there was nothing the matter with it.

Mr. Swayne—Didn't you add a "but?"

Mr. Coleman—There were no "buts" about it. I bought the mare at a sale on Stockbridge race-course. None of the horses were warranted. I have no objection to state the price—I bought her at thirty guineas. I hunted her during the first season she was in my possession. I told Mr. Hussey he had better jump her a little to get her into practice. A horse will point its foot from any disease causing pain in the leg. Pointing is not a characteristic of navicular disease more than any other. I would not give an opinion on a horse without seeing it—I think no man would be justified in doing so. Mr. Percivall's book is a very good one. Neither of the mare's feet is contracted. She has very good feet. I have not pared them. It was under the advice of my attorney that I refused to allow Mr. Spooner to see her this morning. I do not remember seeing the groom in the street, and his telling me of the lameness. The first time I saw the mare was in the stable. I have not taken the angle of inclination of her feet—there is no rule or model for that. She has rather a high foot. I have known instances of rapid ossification. I have known ossification completed in a month.

Mr. Swayne—Can you tell us in whose horse?

Mr. Coleman—Yes; Mr. Sainsbury's, of Lavington. It was quite lame—more lame than this mare when she was sold at the repository. The case I have mentioned was the result of a blow from the shaft of a wagon. I have not known a case take so long as twelve months. Hundreds of horses suffer from ossification without its being known—they are so free from lameness. This mare could not have had it without my knowledge, because I examined her. It begins out of sight, but is perceptible to the touch. I swear that I could see or feel nothing of ossification on the 9th of November.

Mr. Swayne—I certainly should be astonished if Mr. Norris had not told me that people will swear anything in a horse case (laughter).

Mr. Coleman—I recommended bleeding for the ossification. Bleeding would remove inflammation and check ossification. Bleeding is the best remedy for navicular disease. On the 21st January I met Mr. Aubrey on the Stratford road, but did not tell him that the mare had navicular disease.

Re-examined—There was no complaint about the filling of the leg until Mr. Hussey wished to return the mare. I examine many horses

for sale, and it is the practice to examine the feet most particularly. Ossification cannot exist without being felt—it may not be visible.

Mr. Robert Coleman, father of the defendant, said he was a veterinary surgeon at Tilshead. He was brought up to the profession from childhood. He knew this mare, and rode her from April to October last. He never saw anything wrong in her action. He never examined her to see if she had side-bone—it could not, however, have existed without his knowing it. He was admitted to have as quick an eye as anybody. The mare's feet were not contracted. He saw that she had side-bone after the sale at the repository. He had seen no symptoms of navicular lameness—he was certain the mare was not suffering from navicular disease when she was sent to Salisbury.

Cross-examined—The mare was not lame to-day. Navicular disease could not exist without lameness.

Mr. Swayne—Then you think navicular disease is an insertion of lameness into the foot?

Witness—Yes, when it comes there (laughter). He had been in practice more than forty years, but never heard of navicular disease before he commenced practice. Ossified cartilage might, in the first place, exist without being felt. He had known side-bone produced in three weeks or a month after injury.

Edwin Pain, smith, of Tilshead, shod the mare until she was sent to Salisbury. She was not lame. Her feet were both the same size.

Thomas Collins, smith, of Salisbury, many years assistant to the late Mr. Snow, shod the mare once before she went to Mr. Hussey's. He did not see any side-bone. He had seen so many cases of side-bone that he thought he must have discovered it if it had existed. There was no contraction of the mare's feet.

Mr. Richard Pile, farmer, of Woodford, said he had a ewe break her leg a short time since. He set it, and the bones were sufficiently united for her to walk in a fortnight.

Mr. George South—I am a veterinary surgeon, living at 40, New Bond Street, London. I am a member of the Royal College of Veterinary Surgeons. I have four large establishments, and a very extensive practice. On the 21st of January I was sent for to examine a bay mare for Mr. Coleman. I found an enlargement on the outside of the off fore foot, but not a very large one. It was an enlargement of the lateral cartilage, commonly called ossification. About three parts of the cartilage were ossified; the other portion still yielded to pressure. In my judgment it had been forming about a month or six weeks. I have seen hundreds of cases of ossified cartilage. In some cases ossification is more rapid than in others. We form an opinion from the quantity of bony matter thrown out. I have seen the mare again this day. The cartilage is not yet wholly ossified, but is rather more rigid than at the time of my first examination. I have heard the evidence as to the lameness of the 3d of December, and I should say that the injury which caused the enlargement was certainly not of an earlier date. I have examined the mare's feet. Neither of them is contracted that I can detect. I measured them to-day, and could not detect the slightest difference. I have no hesitation in saying that she has not a contracted foot. I ran her out, and she went very soundly. I could not detect the slightest trace of navicular disease. I have not the slightest hesitation in pronouncing her free from navicular disease. She appears perfectly sound, except the side-bone. Ossification in an incipient state is readily detected by manipulation, and not by the eye.

Cross-examined—She has not two contracted feet. I did not measure

them on the 21st of January. An enlargement of the cartilage renders a horse unsound. This mare is liable to become lame, and I could not pass her as sound. Bleeding in the toe is a very good remedy. The cartilage is still moveable. I cannot state the shortest time in which I have seen complete ossification of the cartilage produced. I have seen one case in five or six weeks. My attention was not directed to navicular disease the first time I was here. In case of rapid ossification there would be great inflammation.

Re-examined—Ossification generally ensues after inflammation. When there is inflammation there is great pain and lameness. To-day is the first time I ever heard of navicular disease in this mare. It is universally admitted that side-bone produces lameness.

By *Mr. Swayne*—There was no one on her when she was trotted up and down the street to-day. If she had navicular disease there would be an alteration in the character of the foot altogether. Chronic navicular disease is not curable; it is frequently cured when in an incipient state.

By *Mr. Norris*—Bleeding is an excellent remedy; Mr. Coleman was quite right in recommending it.

Mr. Samuel Tremlett—I am a member of the Royal College of Veterinary Surgeons, residing at Blackheath Hill, Greenwich. I was one of the Government examiners of cavalry horses during the Russian war. I have examined thousands of horses as to soundness, and have rejected hundreds—of course from all manner of diseases. I have to-day seen and examined a bay mare belonging to Mr. Coleman. I found a partial ossification of the lateral cartilage outside the fore foot. It is in a chronic state, and it is impossible to give a decided opinion as to the time of its formation, except from the evidence offered here to-day. There is a very great difference in the time—in some cases ossification is complete in a month or two; in others it takes longer. From the evidence I should consider that ossification commenced when the mare first fell lame. I have examined her feet, and do not find the slightest difference in their size. I had her run out, to see if there were any symptoms of navicular lameness: there were none. I believe she is free from navicular disease.

Cross-examined—Horses will point from any disease of the foot. I do not think there is any particular mode of pointing in navicular disease. I did not measure the feet; I merely examined them with my eye. There may be a little dodging in shoeing, but a professional man would detect it in a moment. Ossification is, in some cases, very quick; in others it is slow. The more acute the inflammation, the quicker is the ossification. At this stage it will go on very slowly. I should have endeavoured to find out the history of the case if I had not heard of the Castle-street affair. I have seen such cases as this produced in two or three months; others standing two or three years have not been worse. It is longest with heavy horses. If this case had commenced two years ago, I think it would have proceeded further than it has done—particularly with a horse that has been on the road. There is more trouble in getting rid of lameness a second time than at its first appearance. If it had been proved that enlargement existed at the time of shoeing, my opinion would be that ossification had begun before. When there is lameness the groom ought not take the horse out the next morning. I should be sorry if I could not tell whether a horse had navicular disease without putting a person upon it. Any concussion would be likely to produce ossification.

Re-examined—Ossification would be more rapid at the commence-

ment of the disease, because of the presence of inflammation; after that it would go on slowly.

This being the defendant's case, Mr. Norris proceeded to sum up the evidence, and pointed out a case of side-bone in the *Veterinarian*, in which the judge gave a verdict for the defendant, because the plaintiff kept the horse a month without complaining of it.

The Judge said, Mr. Norris might use that case in his argument, but he himself did not pay much attention to County Court decisions, because they were not, as in the superior courts, recorded by regularly trained reporters. They had there not merely the authority of the Judge, but that also of the reporter.

Mr. Swayne, in his reply, said he, too, could produce a case from the *Veterinarian* of the present month, in which the Judge of the Macclesfield court decided that the objection which Mr. Norris had raised could not be entertained, except as evidence for a diminution of damages.

Mr. Norris—In that case the seller admitted at the time of sale, that there was some enlargement, but he said it was constitutional. It will not, therefore, apply to the case now before the Court.

Mr. Swayne said he did not rely upon it. The learned counsel then referred to the case of *Patchell v. Tranter*, and that of *Kiddell v. Burnard*, to show that retaining possession of the horse for the time mentioned did not affect the original contract.

The Judge—Don't lose time: the law is quite clear.

Mr. Swayne then recapitulated the leading facts, and contended that the evidence of Messrs. South and Tremlett was not inconsistent with the plaintiff's case. The probability was that the mare had incipient disease at the time of sale. It would have been much fairer if Mr. Spooner had been allowed to see her.

His *Honour*, in putting the case to the jury, said there could be no doubt as to the amount of damage—the plaintiff was entitled to the amount claimed, or to nothing. From the attention they had paid to the case, he thought it was useless for him to go through all the evidence of the professional men. All he had to do was to request them to draw a distinction between facts and opinions. When they came to canvas the evidence of those gentlemen, they must see how far they were grounded upon fact; and if they were satisfied of the facts, they would not have much doubt as to the correctness of their opinions. After referring to those portions of the evidence which he thought had the most bearing on the case, his Honour said the jury were bound to take the law of the case from him. He was there for that purpose, and if he was wrong he alone was responsible, and either party could move for a new trial, or take the opinion of the court above. No such law was recognised in the superior courts as that which had been attempted to be laid down by the defendant. The law of the land was this—if you buy a horse and pay for it, and afterwards find you are taken in, and you have a warranty, your only alternative is to bring an action for breach of warranty. You cannot return the horse to the other side. Nor are you prejudiced by keeping it a fair and reasonable time before making a complaint. If you have confidence in the party of whom it is purchased, you may go on two or three months without taking much note of it. Because they have a warranty many people do not make such a close investigation as they otherwise would do. They would not take a warranty if so many precautions were to be adopted. In bringing an action, then, for a breach of warranty, Mr. Hussey has taken that course which the law of the land allows to be the usual one. Again,

supposing that Mr. Hussey had not paid for the horse, and an action had been brought for the recovery of the purchase-money, he could then have given in evidence the breach of warranty. A writer of the highest authority says—"Where the article of sale is warranted, it seems that the vendee is entitled to prove the inferiority and the breach of warranty, in diminution of damages, although a specific price has been agreed upon. This is not open to the objection that the defendant ought to have rescinded the contract *in toto*, for through the nature of the contract of warranty he has a right" (strong is the word) "to keep the goods and recover damages for the breach of warranty." Such I say is the law in the case before you, and if I lay it down wrongly I am responsible. Then let us look at another important point—do you think that this horse was sound or unsound at the time of sale? I will here read to you an important observation of one of the judges in the case of *Kiddell v. Burnard*. He says—"The word sound implies the absence of disease, or the seeds of disease, which impairs the natural usefulness of the animal." In considering your verdict, therefore, you must bear this point in mind. If at the time of sale there were the seeds of disease in this mare—if the membranes were affected—if the cartilage was partly ossified, even though it could not be seen, it would be enough for the plaintiff's case, and would be a breach of warranty on the part of the defendant. His Honour concluded by saying that the law was very simple. The question for the jury was one of fact and opinion. If the facts and opinions adduced on the part of the plaintiff were the strongest, he would be entitled to their verdict. Should the plaintiff's testimony, however, in their opinion be outbalanced by the witnesses for the defence, it would be their duty to find a verdict for the defendant.

After a few minutes' deliberation, the jury returned a verdict for the plaintiff for the amount claimed.

The hearing of the case occupied nearly eight hours.—*The Wiltshire County Mirror*.

MISCELLANEA.

HINTS ON ETIQUETTE.

PEOPLE who have risen in the world are too apt to suppose they render themselves of consequence in proportion to the pride they display, and their want of attention towards those with whom they come in contact. This is a terrible mistake, as every ill-bred act recoils with triple violence against its perpetrators, by leading the offended parties to analyse them, and to question their right of assuming a superiority to which (in the absence of positive rank) they are but rarely entitled.

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Communications and Cases.

ON THE TITLE OF VETERINARY SURGEON.

By "FIAT JUSTITIA."

I CANNOT refrain from expressing my surprise, not unmixed with regret, that the title of veterinary surgeon should be so prostituted. Moreover, Messrs. Editors, I find that occasionally even by yourselves it is applied to those to whom it does not really belong. Such things ought not to be, and especially ought they to be avoided by those who, placed at the helm, might be supposed to have some interest in the safety of the vessel.

I had thought, and I feel assured that the impression is common among the members of the profession, that when our Charter of Incorporation was obtained, in accordance with its laws, the title would have been restricted to those who, having been educated at the recognised schools, had graduated at the Royal College of Veterinary Surgeons.

The words of the Charter, I perceive, are: "AND WE DO FURTHER DECLARE AND GRANT, that the Veterinary Art, as practised by the members of the said body politic and corporate, shall be henceforth deemed and taken to be and recognised as a profession, and that the members of the said body politic and corporate, *solely and exclusively* of all other persons whomsoever, shall be deemed and taken and recognised to be members of the said profession or professors of the said art, and shall be *individually known and distinguished by the name and title of Veterinary Surgeon.*" Thus, unquestionably, the *letter* of the law, parts of which I have italicized, is with us, whatever the intention might have been.

There appears to me no ambiguity here. But is it that the title cannot *now* be restricted? If so, let some other be sought for and applied. The term ZOATRIST, proposed some years since, sounds too foreign to please us; one more euphonious might surely be chosen, although *Veterinary Surgeon* hitches at times on the tongue.

May I further be permitted, through the medium of your pages, to draw the attention of the Council of the Royal College of Veterinary Surgeons to this subject? It is one meriting their earnest consideration, but it appears to have nearly or entirely escaped their notice. Methinks the time is come when something effectual should be done, that we may be enabled to maintain our *status*—some steps taken by which we may ensure our recognition as a scientific body. In numbers we are sufficiently large for this purpose, and I feel convinced that it is only required that certain inducements should exist to make us all that we desire and ought to be. Often you are advocating progress; but how can this be effected whilst as yet it can hardly be said that we have a starting place—no common bond of union, even in a name?

Again I venture to press the consideration of this subject on the members of our Council.

PROPOSAL TO ERECT A MONUMENT TO THE LATE PROFESSOR COLEMAN.

SIRS,—From some observations in your last number, you seem not to view with favour posthumous honours. You would rather that honour should be paid to the living than the dead. Were this invariably the case, would it not engender a spirit of pride and self-satisfaction, and even of idleness?

It is true, that many have had to contend with cankering care and wipe the brow of poverty, while exposed to the proud man's contumely and the world's scorn—their labours and their talents alike unheeded. Yet has all this, painful as it is, been the means of exciting them to increased energy, and the working out of a greater amount of good for their fellow-men.

Then does it not call forth some of the nobler feelings of man, when, recognising what *has* been done, he evinces his gratitude in a public record to neglected worth? And may

not this operate as an incentive to others to do likewise? Chill not the flow of love by which surviving friends may be cheered.

My object in thus writing, is not so much to indulge a spirit of censoriousness, as to awaken the veterinary profession to a sense of its neglect, and to induce its members to avail themselves of the feeling which now prevails to remove the imputation.

It is true the person I plead for was never pinched by biting poverty, nor exposed to the world's neglect, but contrariwise; nevertheless, as we are told to give honour to whom honour is due, there has been a remissness on our part. I refer to the late Professor Coleman, "a man, take him for all in all, we ne'er shall look upon his like again." Did he not, for the long period of half a century, fill with distinguished honour the chair of principal professor to the Royal Veterinary College, the parent institution in this country? Have his pupils forgotten the easy and pleasing manner in which he was wont to inculcate important truths connected with medicine? Can they not recall to mind his sound common sense, and the clearness and force of the arguments which, in after life, they have found so beneficial to their interests? Did he not, by his associations and suavity of manner, considerably add to the respectability of the profession, and the estimation in which it is held by the public? Through his instrumentality were not many of the medical schools of London free to his students, and did he not urge and successfully carry the recognition of veterinary surgeons to the army as commissioned officers? Did he not likewise contribute to the literature of his profession? Not, perhaps, so much as he might have done; but have others who have succeeded him done more?

These, my views, Messrs. Editors, might be multiplied, but I refrain. Enough has been said to show the desire by which I am actuated, namely, to evince by some public monument the respect we, as a profession, entertain for the memory of one to whom we are all so much indebted. I must leave the working out of the matter to others, and be content with having made the proposition. May it be realised in my day.

Yours,

SINCERITAS.

CASE OF CHRONIC DISEASE OF THE HEART OF A HEIFER.

By H. LEPPER, M.R.C.V.S., Aylesbury.

I HEREWITH send an interesting specimen of disease of the heart of long standing, which was taken from a four-year-old heifer of the pure short-horn breed, and which possessed a pedigree of the first order, and had obtained honours at the meetings of the Royal Agricultural Society of England. She was the property of Sir Anthony Rothschild, and was generally kept at his "model farm," at Aston Clinton.

In the spring of last year, she brought forth two fine healthy calves, and as she apparently was perfectly well afterwards, she was depastured in the park throughout the summer months with other beasts of her class. During the latter part of the summer she was noticed to look less blooming in her condition than her companions, and was, consequently, in the beginning of the autumn, removed to the "Hill Farm," being a very high and dry situation. She was here most liberally fed, and was thought to be doing well until the beginning of March, when she fell a little off her appetite, but as she was approaching the time of her second calving, it was not taken much notice of. At this period she was brought back again to her old quarters, the model farm, to await her delivery, which was expected to take place about the 18th of March.

My attention was called to her on the ninth day after her arrival, when I found that her appetite was much impaired, and that rumination was also suspended. She was dull; the *fæces* watery, dark, and offensive; the pulse about 75 in the minute; the margins of the lips of a purple hue; the ears and horns rather cold; and indeed the temperature of the whole body below the healthy standard. The mammary glands were flaccid, and it was evident that little or no secretion was going on, although she was within a few days of the time of parturition. From the character of the symptoms I was induced to regard the case as one of general congestion of the capillaries of the system, and more especially of the liver. I directed that she should be kept warm, and be supplied with food of any description that would be likely to tempt her appetite. I also gave her small doses of the chloride of mercury, in combination with opium, twice a day. Some aromatic infusion was likewise exhibited. The con-

dition of the excretions was improved under this treatment, but as little food was taken, the bowels were not relieved oftener than three or four times in every twenty-four hours.

She continued much in the same state until the morning of the 16th, when, contrary to my expectations, she produced a healthy male calf, which was, however, of somewhat small size. On the 20th I instituted a more minute examination of my patient, and found all the usual indications of organic disease of the heart. Its action appeared almost indistinct, and there was the ordinary overcharged state of the jugular veins which is found in dropsy of the pericardium. A little effusion also existed at the point of the sternum, as is usually seen in hydrothorax. From this state of things I looked upon the case as a hopeless one, and discontinued all further medical treatment.

As the animal was in good condition, I was very desirous of having her slaughtered, to which, with much reluctance, Sir Anthony gave his consent. She was thereupon killed on the 25th—nine days after parturition.

The *post-mortem* examination brought to light a very singular mass of disease. The liver was of a light nutmeg colour, and very easily broken down under moderate pressure. The biliary ducts were enlarged, and in many places partially ossified. They contained a few flukes, but I did not regard this as a matter of much importance.

In the thoracic cavity four or five gallons of serous fluid existed, and the heart was found to be exceedingly enlarged, weighing no less than *fourteen pounds*, this being about double the weight of an ordinary sized one.

The pericardium also was very much thickened, and contained about two quarts of a pus-like deposit, which was very offensive to the smell. There was a considerable amount of serous effusion in the areolar tissue over the whole frame, especially surrounding the kidneys and between the large muscles, as well as beneath the integuments.

It is somewhat singular that an animal with so much organic disease should have maintained her high, rather fat condition, and have gone her full period of utero-gestation, producing a live and apparently healthy calf.

[The enlargement of the heart was due to layers of lymph, which had taken place on its external surface, and which had become gradually organized by the extension of the vessels from the substance of the organ into them. The walls of the heart were thus thickened to nearly three times their natural extent. A perfect line of demarcation existed between the

original normal tissue of the heart and the abnormal effusions of lymph. The condition of the muscular structure of the organ or of the pericardium did not, however, afford any satisfactory proof of the changes which had been wrought being referable to inflammatory action. The appearance was rather that of a morbid growth from the external surface of the heart than anything else. We have seen several similar cases, and also in cattle which were high bred and in a fat condition.]

THE EPIDEMIC OF 1858-9.

By ROBERT HUNT, M.R.C.V.S., Edgbaston.

IN every returning season many cases present themselves, to which that convenient, but ambiguous, term influenza is applied. In this respect, I apprehend, we are very much in the same position as the practitioner of human medicine. Although it is the prevailing impression that in this disease the mucous membranes of some part of the frame are always implicated, the term influenza is nevertheless given to diseases of varied character, and it is therefore not surprising that this confused state of nosology and pathology should be attended with much practical inconvenience. When the inexperienced or unskilful practitioner meets with a case beyond his education and practical acquirements, he, like all men when in the dark, makes ill-directed efforts to extricate himself from the difficulty; the outcry is raised for some "panacea" or specific; whereas, common sense and general principles are the only reliable sources in our choice of therapeutical agents. It is only by pursuing the high road that the paths of error can be avoided; it is only by a plain interpretation of natural facts that we can hope to steer clear of mischievous practice.

I was pleased in perusing in your last volume some remarks made by a gentleman, who evidently had closely watched his cases of what may not inappropriately be called epidemic paralysis. I allude to Mr. Smale. I can echo his words to a considerable extent about the character of the attack prevalent at that period, and I agree also with his treatment; but I found one thing indispensable, and that was *rapidity of action*. The counter-irritants I used were of the most active kind, and of those I found the Acetum Cantharidis mixed with mustard to be very efficacious, for it was no sooner applied than action commenced. I also kept the

large intestines unloaded by means of aperients, and after that resorted to the exhibition of the sulphates of iron and copper. In proof of the value of this treatment, I would particularize a case of a weight-carrying bay mare that was down for three days; and it was only at my urgent request her life was spared. She recovered to carry her owner (who walks nearly sixteen stone) as well as ever.

I think the suggestion thrown out by another of your correspondents, Mr. Storrer, of the existence of a narcotic principle in rye-grass, is not tenable. I have been a grower of that excellent plant for fourteen years, and my experience is much in its favour as green food, believing it to possess more nutritive properties than either vetches, lucerne, or clover.* The stem and seeds of all plants are both more palatable and suitable for horses, in my opinion, than the leaves, as they contain so much less water.

The epidemic of 1840-41, which was accompanied with tumefied eyelids and copious defluxion of tears, drooping head, and quick pulse, so suggestive of headache, I never see now. The catarrhal fever, with discharge from the nose, eyes, and mouth (the influenza *par excellence*), now occupies a place in our hippopathology, and will, I suppose, to the end of time; as does the pleuritic form, with its little distinctive marks to show the line between itself and what I may call the legitimate disease. All these have been accompanied by one invariable symptom, *debility*, and on this account an intolerance of depletion. In those cases where the pulse, from its frequency, has induced the practitioner to bleed—and these have not been a few—I think I may say that he has never failed to regret doing so.

The disease of this season presents some change in its primary attack, and also in its complications, but not as to the debility, excepting that it is more intense in degree.

From November of last year till this time, this district has been visited by an immense number of attacks of bronchitis; in fact, I may say it is a prominent disease at the present moment, and is accompanied with such an amount of prostration of the vital powers, that all medicines of a lowering character, and also the stereotyped febrifuge treatment, have to be abandoned, and stimulants and tonics to be substituted, and this almost at the onset of the attack.

The patient presents the usual symptoms of increased respiration; quick and sometimes full pulse; appetite capricious and diminished, but not entirely gone; fæces hard and

* Mr. Storrer's description applied to the *common* rye-grass, not the *Italian*, the plant which is cultivated by Mr. Hunt.—Eds.

thickly coated with yellow mucus; the visible mucous membranes very frequently tinged yellow also, showing implication of the liver; and this is, I think, a feature quite peculiar to this year's epidemic. On about the fourth or fifth day, and not until then, the orange-coloured characteristic discharge from the nostril makes its appearance.

My treatment has been to administer a mild laxative of one or two drachms of aloes, combining a little calomel; and when the fever runs high, and the mouth is clammy and offensive, I have found Acid. Hydrochlor., 3ss, given in 12 oz. of water night and morning, very refreshing to the patient; it acting as a disinfectant, and cleansing the mucous membranes immediately. Blisters have been applied to the sides, and along the course of the trachea; and I have given daily, what would have seemed almost preposterous a short time since, namely, one drachm of sesquicarbonate of ammonia, with two drachms of gentian-root in powder, increasing the dose as the case required it, till four drachms of each have been administered. As the patients approach convalescence, I allow them anything and everything they can eat: the debilitating effect remains on them for some time; in some instances it is from five to six weeks before their strength is restored. In one case laminitis supervened, but the horse eventually recovered.

With this treatment, I am happy to say, I have been very successful, losing only one patient, and he had been bled by the attendant previous to my seeing him.

SPECIMENS OF THE "STRONGYLUS GIGAS" FOUND IN THE KIDNEY OF A DOG.

By A. BICKFORD, Student of Veterinary Medicine R.V.C.

BEING desirous of making myself acquainted with the viscera of the dog—the thoracic more particularly—and being told that the carcass of one was lying in a gutter not far from the College, I thought that it would afford me an excellent opportunity of gratifying my wish.

I found that the dog had not been dead very long—at the utmost twenty-four hours; that he was a young animal, and that he belonged to the breed commonly called by dog-fanciers "the broken-haired bull terrier."

While examining the abdominal viscera I was struck by the unusual appearance of the right kidney, which was quite

as large again as its fellow ; and on making an incision through its capsule, I was surprised to find that it contained three large worms, which, on my showing to Professor Simonds, he at once described as being specimens of the “*Strongylus gigas*.”

The whole of the cortical and medullary portions of the kidney were absorbed, its capsule was thickened and considerably enlarged, its inner surface was ecchymosed, and between these spots were osseous deposits. The renal artery was rather smaller than it would be in a state of health, the vein being about the natural size.

Besides the three strongyles, the cavity contained a small quantity of a reddish coloured fluid, some of which had apparently escaped through the partially pervious ureter into the bladder, as the contents of that viscus appeared of a dark colour.

I am totally unacquainted with the previous history of the dog. A careful examination was instituted of the remaining viscera, but I could not detect the slightest evidence of disease. The dog was not at all anæmiated ; but, on the contrary, the muscles were of a florid hue, firm, and well developed. The brain presented no evidence of disease, nor were its vessels unusually full.

I am at a loss to account for the death. If the kidney had been the only organ I examined, then a great many hypotheses, more or less ingenious, might have been adduced to account for it, whereas the changes usually associated with suspended function of these organs had no existence.

The contents of the stomach were not analysed, but from the appearance of its coats it seemed evident to me that no irritant poison had been the cause of death. The condition of the dog, and the healthy appearance of all the viscera, with the exception of the right kidney, seems to preclude the idea of his death being immediately due to the presence of the strongyles ; but whether such was the case or not, I leave to the ingenuity of your numerous readers to decide.

[An examination of these strongyles showed that two of them were females, and the other a male. The females greatly exceeded in size the male ; each being about twelve inches long, and somewhat larger in circumference than a full-sized goose-quill. The male was about the size of a crow-quill, and measured not more than nine inches in length. The cup-like bursa at its caudal extremity was well

developed, giving to the entozoon a very different appearance at this part to the others. None of them varied much in their dimensions from head to tail, and could hardly be said to taper towards either of their extremities. From the entire substance of the kidney being absorbed, and the ureter being nearly impervious, the worms were isolated, and placed as it were in a sac. The ecchymosed spots, spoken of by Mr. Bickford, had apparently been caused by the sucking of the entozoa; a fact which received confirmation by their being of a red colour, and filled to repletion with the blood of the animal.

The dog was not more than a year old, as shown by the state of his dentition.]

SYMPTOMATIC DISEASE OF THE BRAIN OF A COW.

By G. ARMATAGE, V.S., Bicester.

A FAVORITE short-horn cow, the property of Jonas Paxton, Esq., of this place, was on Sunday morning last observed to be ill for the first time in her life. On my arrival I found her suffering from an affection of the brain, manifested by her moving her head to and fro; the eyes appeared as if they would start from their sockets; the pupils were dilated; and the blood-vessels highly congested, causing the sclerotic coat to be of a purple hue. The Schneiderian membrane partook of the same colour; the breathing was stertorous; pulse 60, and strong; mouth fetid; and a discharge of frothy mucus of a greenish colour issued from the nostrils, which in a few hours became considerably increased. Slight tympany of the rumen was also present, and the third stomach could be plainly felt in the flank when the animal was moved over on the right side.

She was found lying on the left side, and continued to kick with her legs, occasionally putting her nose to her side, and when first observed would allow her head to remain on her shoulder for some time.

From the urgency of the symptoms, I could entertain no hopes of recovery; nevertheless, I abstracted blood, and exhibited a powerful cathartic drench, and followed it up with enemias.

She died the same evening, and on examination the fol-

lowing morning the third stomach was found impacted with dry food to an enormous extent; the fourth stomach and small intestines were inflamed, particularly the latter; the anterior portion of the rumen was united to the surface of the diaphragm. I have forwarded to you a portion of the spleen; the remainder appeared healthy, as also all the other viscera. Unfortunately, being called away, I had no opportunity of examining the brain.

Upon inquiry, I was informed the animal was eleven years old, was bought in when a calf, and had never been observed to be otherwise than in perfect health. She had been in Mr. Paxton's possession the whole of the time.

[In the portion of the spleen received by us was located a hydatid, the size of an ordinary cricket ball. Absorption of the organ had taken place to such an extent as to leave scarcely any of its structure between the entozoon and the peritoneal tunic, and consequently the parasite gave a rounded form to the affected part of the spleen. The vessels here were turgid with blood, which well mapped out their course, and showed their dimensions, &c. The structure of the spleen, however, was not otherwise affected.]

CHRONIC DISEASE OF THE INTEGUMENTAL AND OTHER TISSUES OF THE HIND LIMB OF A MARE.

By H. MOSLEY, V.S., London.

THE leg and foot forwarded for your inspection belonged to a bay mare of the cart breed, the property of Mr. Wheatley, omnibus proprietor, Greenwich. It is nearly three years since I first saw the animal, when I found her very lame, from having been pricked in shoeing, as I was told. The sole was underrun, and the suppuration had extended to the coronet, all round the outside. On paring out the foot the sole presented the appearance of canker, and the limb was much enlarged from chronic grease. I mentioned this at the time, and said that the case would very likely terminate in farcy. The mare had at the time a foal at foot, which was about a month old, so that her lameness was not much noticed until it became very severe. Ordinary dressings were applied to the diseased foot, and astringent lotions to

the limb, for about two months. I also gave tonic medicines. The foot got better, but the enlargement of the leg, and diseased state of the skin, continued to increase until the animal was destroyed.

[It is rarely that an animal is allowed to live sufficiently long for disease of a limb to be developed to an equal extent as in this instance. The morbid production was mostly of a fibrinous nature, as shown on section. It involved the bone, periosteum, tendinous and ligamentous structures, as well as the common integument. Sinuses ran through its substance in several places down to the bone, and the discharge which came from them had a most fetid character. Its greatest development was in front of the coronet, and at its largest part it measured fifty-one inches in circumference. The weight of this cumbersome mass of disease was no less than eighty-one pounds.]

Facts and Observations.

PRIZES OFFERED BY THE ACADEMY OF MEDICINE OF BRUSSELS.

THE value of comparative pathology in advancing the healing art would seem to be more correctly appreciated abroad than at home, as we observe among the prizes offered by the Academy of Medicine of Brussels, that several relate directly to veterinary science, namely :

“Determine the Nature and Etiology of the Morbid States of the Horse included under the vague name of Influenza; point out the relation they may have with Typhoid Affections in Man, and the Treatment best suited for such States: a gold medal of £40.” Before the 1st of July, 1861 :

“Determine by new Experiments upon Mammalia, the Relations existing between the Oxygen absorbed by the Lungs and the Carbonic-acid Gas exhaled by the Skin; settle the amount of Influence exerted by this exchange by Rest, Motion, Temperature, and Food:” a gold medal of £60.

“Describe the Present State of Science as to the Nervous Diseases of the Horse, dwelling especially on the differential Diagnosis of these Diseases:” a gold medal of £32.

The essays to be sent to the Secretary's office of the Academy, Place de Muséc, No. 1, Brussels.”

TETANUS TRANSMISSIBLE FROM THE LOWER ANIMALS TO MAN.

THE *Gazette Médicale de Lyon* (May 1st, 1859), publishes the following case, taken from the *Annali Universali* (1859, p. 36): An inhabitant of Campinas (Brazil) had a bull cut, and the animal died tetanic, probably from some defect in the mode of operating. He ordered the bull to be buried, but his slaves ate the meat by stealth. One of them was immediately seized with tetanus, and died in a short time. Two days afterwards another died of the same affection in hospital, and a third was also admitted, suffering in the same manner, but was likely to recover. Dr. Betoli, who relates these facts, states that he thinks the transmissibility of tetanus from animals to man proved, but not from one human being to another. The same physician has seen tetanus reign epidemically in Brazil.—*Lancet*.

POISONOUS EFFECTS OF THE SALTS OF COPPER WITH ORGANIC BASES.

IT is worth noticing that M. Falck has instituted a series of experiments on pigeons to ascertain the effects of the acetate, lactate, butyrate, and malate of copper, in doses varying from one to fifteen grains. Death ensued very rapidly, preceded by vomiting, very abundant blue or green dejections, dyspnœa, cold skin, exhaustion, convulsions, and paralysis of the heart. On opening the animals, M. Falck found inflammation and chemical lesions of the alimentary canal, effusion of blood in the bowels, great vascularity of the intestinal mucous membrane, heart dilated and gorged with dark blood, hyperæmia of the lungs, and scarlet colour of the blood contained in them.—*Deutsche Klinik*, 1857 and 1858.

DUST FLOATING IN THE AIR.

M. POUCHET finds that the dust floating in the air contains the detritus of the mineral constituents of the globe, atoms of animals and plants, and the finest débris of all the matters we make use of. But one item he especially points

out, viz., *wheat-starch*, which is invariably found in the dust whether old or recent. Surprised at the quantity of it present among the aërial corpuscles, M. Pouchet investigated the dust of all ages and of every locality; and everywhere he found this wheat-starch presented. "I have found," he says, "the starch in the most inaccessible corners of old Gothic churches, mixed with dust blackened by six or eight centuries of existence. I have found it in the palaces and caves of the Thebiad, where it may have dated from the time of the Pharaohs, I have found it in the tympanic cavity of the ear of a mummified dog, which I had discovered in a subterranean temple of Upper Egypt. In all countries, in a word, where wheat forms the staple of food, starch always penetrates into the dust, and is met with in greater or less quantities. Hence, therefore, the *corpuscles* of which we have heard so much, are granules of starch and silica."

Twice only in a thousand experiments has M. Pouchet observed the large ova of infusoria in the atmospheric duct.
—*Medical Times and Gazette*.

A NEW VERMIFUGE.

IN Barreswil's 'Répertoire de Chimie' appears a report showing that, from the analysis made by M. Helet, of the *Ailanthus glandulosa* (the Japan varnish tree), the bark and other parts contain an oleo-resin, or mixture of a volatile oil with a fixed one, which is a powerful vermifuge.—*Lancet*.

A NATURAL RESULT.

A COXCOMB, teasing Dr. Parr with an account of his petty ailments, complained that he never could go out without catching a cold in his head. "No wonder," returned the doctor; "you always go out without anything in it."

GOOD DESCENT.

It is a question whether being called "the son of a gun" should not be taken as a compliment rather than as a term of abuse, as it is well known that no gun is good for anything unless it *descends in a straight line from a good stock*.

Extracts from British and Foreign Journals.

WONDERS OF THE MICROSCOPE.

By A. S. COPEMAN, V.S., Utica, N.Y.

(Continued from p. 276.)

IT being demonstrated by the microscope that the cell is the primordial condition of the animal and the plant, it is essentially necessary that the student of histology should be familiar with these primary elements of both divisions of the organic world. In the most ordinary form of endogenous cell-formation the first phenomenon observed in the parent cell is the increase of the nucleus (*mesoblast*, Agassiz), which becomes elongated, and eventually resolved into two parts. These separate from each other, and a partition is formed, thus dividing the parent cell into two perfectly distinct spaces, each of which incloses a nucleus and half of the contents. This mode of cell-formation is continuously repeated as long as the growth of the organism continues. The recurrence of this endogenous cell-formation is well established in the case of the young cartilages of all animals, and in embryonic organs in general, in whom from the period at which they consist of true cells, the entire growth depends upon the multiplication of the existing cells.

Cell formation by division has also been observed in the blood-corpuscles of embryos and the chyle-corpuscles of mammals; in these the cells first become elongated, and the single nucleus divided in two; the cells are then constricted in the middle, and finally resolved into two, each with a nucleus.

To Prof. Kölliker is due the honour of demonstrating by the microscope that both voluntary and involuntary muscle is resolvable into elongated cells. "I am enabled to show," says this learned physiologist, "that in the two-month human embryo the earliest forms seen were simple fusiform cells, containing in the middle portion one or two elongated nuclei, attenuated at each end. In the muscular substance of the thigh complete series of forms, from simple elongated primordial embryonic cells, could be traced up to fibres containing elongated nuclei, and also presenting the transverse striations, so that it could not be doubted that the future muscular fibres are derived simply from a growth in length and breadth of the original unnucleated fibre-cell."

Confirmations of this view of the structure of muscular fibre have recently been received from various quarters, one of the most important being the observations made by Dr. Lister, who sums up the results of his investigations as follows: "In the arteries of the frog, and in the intestines of the pig, the involuntary muscular tissue is composed of slightly flattened elongated elements, with tapering extremities, each provided at its central end and thickest part with a single cylindrical nucleus imbedded in its substance. It further appears that in the pig's intestine the muscular elements are on the one hand capable of an extraordinary degree of extension, and on the other hand are endowed with a marvellous faculty of contraction, by which they may be reduced from the condition of very long fibres to that of almost globular masses."

The discovery of these "contractile or muscular fibre-cells," as Kölliker termed them, is one of the most important and beautiful ever made in anatomy.

In passing, we will now notice the *characteristics* which distinguish the animal from the plant. It is when we examine the *nutrition* of the vegetable and animal kingdom that we find characters and properties peculiar to each; even in the lowest and simplest forms of both these are most distinctly delineated. For the Protophytes, like the perfect plants, draw their nutriment from the inorganic compounds—water, carbonic acid, and ammonia; by decomposing carbonic acid they give off oxygen, and by this process form for themselves the starch, the cellulose, and the albumen, which is applied to the augmentation of their own substances. On the other hand, even the humblest Protozoa can only exist (so far as we can see) upon materials previously elaborated by other organisms of equal simplicity; these they receive *bodily* into their interior—though mouth, stomach, intestines, and anus, all have to be quickly passed every time the animal feeds, yet the digestion which the alimentary particles undergo is not less complete than in the most elaborate digestive apparatus. Thus, notwithstanding the remarkable *analogy* which these two orders of beings exhibit, we cannot see that any difficulty need be experienced in separating them, when we are acquainted with their modes of nutrition.

The microscope, in conjunction with chemistry which, if it cannot imitate, is at least beginning to trace accurately the changes undergone by the elements contained in a living cell, and is hastening the time when physiology shall pass from the speculative to the certain sciences, and medicine no longer remain a conjectural art.

In revealing the great fact that animal and vegetable tissues are principally composed of cells, and that all the functions are the result of the *properties* of individual cells, the microscope has laid the foundation of the true science of life.

Space will not permit us to dwell upon the great and manifold interest of the endless variety of objects which come within the reach of every one; but if a knowledge of variety and delicacy of structure, beauty of form and colour, and the nicest transitions from genus to genus, and adaptations of means to particular ends, be in any way desirable, it may most surely be attained by the aid of the microscope.

The rich and varied tints of the plumage of the birds are universally admired, and have been esteemed as their peculiar ornament; but place a butterfly's wing under a microscope, and you will discover that nature has imparted to it a most lustrous beauty, multiplying the forms and diversifying the colouring of this kind of clothing beyond all parallel. The same may be said of thousands of insects, whose radiant beauties were shut from human ken till man's God-given intellect invented the microscope.

We admire and with reason the coats of quadrupeds, whether their skins be covered with *pile*, *wool*, or *fur*; yet are not perhaps aware that a vast variety of insects are clothed with all these varieties of hair, but infinitely finer and more silky in texture, more brilliant and delicate in colour, and more variously shaded, than any with which the larger animals are endowed. Many she has also armed with glittering mail, which reflects a lustre like that of burnished metal; in others she lights up the dazzling radiance of polished gems. What numbers even outvie the charming offspring of Flora in their various beauties as seen in the delicacy and variety of their colours, colours not like those of flowers evanescent, but fixed and durable, surviving with undiminished adornment, even after death. Nor has nature been lavish only in the apparel and ornament of these privileged tribes; in other respects she has been equally unsparing of her favours. To some she has given *horns*, counterparts, as it were, of those of various quadrupeds—the bull, the stag and the rhinoceros. One is armed with tusks not unlike those of the elephant, and another is bristled with spines as the porcupine with quills. We are also admitted to the most sacred recesses of nature, and become acquainted with the *modus operandi* by which the various insects emit their sounds and perform their most delicate offices. Thus we see the cricket rasping with its *file*, the grasshopper beating with her *drum*, and the spider weaving with its *comb*. We might multiply these illustrations indefinitely.

Among the objects of interest so abundantly presented by nature to the microscopist, we find in the waters an almost endless variety of *Diatomaceæ*, commonly but erroneously called "Infusoria." Here again nature exhibits her sportive moods. On many, taking her rule and compasses, she draws with precision mathematical figures—lines, angles, triangles, squares, and circles. On others, bars, bends, crosses, crescents, and stars. To these, her exquisite models, she has given the most "delicate" touch and finish of her pencil.

The microscope has truly been called an "avenue to unseen glories in new worlds," for it brings before every beholder not conversant with its "wonders" forms in endless variety, which before he would not have thought it possible could exist in nature, presenting prototypes of beauty and symmetry exceeding even the wildest fictions of the most fertile imagination.—*New York Spirit of the Times*.

ON THE COMPOSITION AND NUTRITIVE VALUE OF COTTON-CAKE.

By AUGUSTUS VOELCKER.

(Continued from p. 206.)

2. DECORTICATED COTTON-CAKE (*Thick cake*).

This cake is from $2\frac{1}{2}$ to 3 inches thick, but does not otherwise differ materially in its outward appearance from thin cake. It is very hard, and cannot be broken into small bits by ordinary cake-crushers, and for this reason does not command so ready a sale as the thin cake, although it is sold at 10s. to 15s. less money.

Two samples of thick cake, both imported into Liverpool, yielded on analysis the following results :

COMPOSITION OF DECORTICATED THICK COTTON-CAKE.

	No. 1.	No. 2.
Water	10·25	9·08
Oil	14·05	19·34
*Albuminous compounds (flesh-forming matters)	41·31	43·31
Gum, mucilage, and digestible fibre (heat-producing substances)	18·05	10·48
Indigestible fibre	8·40	10·41
Mineral matters (ash)	7·94	7·38
	<hr/>	<hr/>
	100·00	100·00
* Containing nitrogen	6·61	6·93

It will be observed that there is no perceptible difference in the composition of thick and thin cake. In both the thick cakes, being very hard pressed, I expected to find a smaller per-centage of oil than they actually contained. I was particularly surprised to find in the second cake quite as high a per-centage of oil as that contained in the richest thin cake I have had an opportunity of examining, Fearing a mistake might have occurred in the oil-determination, I had a second determination made, which yielded nearly the same quantity, namely, 19·05 of oil. The oil, extracted by means of ether from thick cake, I observed, presented a darker colour than the oil from the majority of the thin cakes, which seems to indicate that more heat has been employed in pressing the thick cake.

3. ORDINARY COTTON-CAKE MADE FROM THE WHOLE SEED.

Cake made of the whole cotton-seed presents a much less inviting appearance than the thin cake; it has a dark-brown colour, is full of hard, dark-coloured seed-shells, is not liked so much by cattle as thin cake, and is altogether a cake of inferior quality.

Some of the cake is prepared in England from imported cotton-seed. The English pressed cake is better than foreign made cake of the same kind. Three samples of this cake furnished on analysis the following results :

COMPOSITION OF ORDINARY COTTON-CAKE MADE OF WHOLE SEED.

—	No. 1.	No. 2.	No. 3.
Moisture	10·53	12·03	11·46
Oil	6·10	6·37	6·07
*Albuminous compounds (flesh- forming principles) . . . }	22·62	25·62	22·94
Gum, mucilage, sugar, and diges- tible fibre (heat-producing com- pounds) }	26·48	29·90	36·52
Indigestible woody fibre . . .	26·96	19·79	16·99
†Mineral matters (ash) . . .	7·31	6·29	6·02
	100·00	100·00	100·00
*Containing nitrogen	3·62	4·10	3·67
†Containing sand	1·76	·91	—
„ earthy phosphates	3·83	—	—
„ alkaline salts	1·72	—	—

On comparing the composition of these cakes with the average composition of decorticated cake, it will be seen :

1. That the proportion of oil in the common cake is very much smaller than in the decorticated cake. The amount of oil is in reality inconsiderable, since most other oil-cakes, such as linseed, rape, poppy, and others, contain a good deal more fatty matter.

2. In decorticated cotton-cake there is a much higher percentage of albuminous compounds.

3. On the other hand, the proportion of indigestible fibre in ordinary cotton-cake is far more considerable than in decorticated cake.

Common cotton-cake is sold at a lower price than the decorticated cake, but, considering the inferior character of the former, its lower price offers little inducement to intending purchasers. A ton of the best decorticated cake, I am inclined to think, is worth quite as much as two tons of the inferior cake made of the whole seed. I consider the latter dear at the price at which it is sold.

The first sample of the three contained much more woody fibre than the two others. I may observe, however, that the proportion of woody fibre mentioned in the analyses of these cakes does not indicate the amount of seed-shells. What is here called indigestible woody fibre was obtained by treating the cake with cold and boiling water, and subsequently with dilute potash solution and dilute sulphuric acid. By these means the albuminous compounds, pectinous matters, and other constituents of the seed-shells are rendered soluble, and the insoluble residue is conceived to be indigestible cellular fibre.

I have endeavoured, approximately, to determine the proportion of shells in the first cake. As the shells are reduced to powder only with great difficulty, whereas the kernel powders readily enough, the proportion of the former may be ascertained with tolerable accuracy by carefully grinding the cake in a stone mortar, and sifting off the hard shells. Proceeding in this way, I found in No. 1, 58·42 per cent. of shells. This is a great deal more than the average amount of seed-shells in cotton-cake made of the whole seed. It appears to me, therefore, not unlikely that this cake contained an additional quantity of shells beyond that which cotton-seed in its raw state naturally furnishes. In the manufacture of decorticated cake large quantities of shells must be obtained, and it is not unlikely that these shells,

with the addition of a little good cake, are pressed into an inferior cake. No. 2 and No. 3 were cakes made in England; they are better cakes than No. 1.

4. OIL-MEAL.

It has been already mentioned that, on account of the difficulty which the consumer experiences in crushing the thick cake, the manufacturers of this article break up the cake into a coarse powder. This is afterwards kiln-dried, and brought into commerce under the name of patent kiln-dried oil-meal. Two specimens of such oil-meal gave on analysis the following results:

COMPOSITION OF PATENT KILN-DRIED OIL-MEAL.

	No. 1.	No. 2.
Moisture	9.40	10.21
Oil	17.39	19.71
*Albuminous compounds (flesh-forming matters)	43.81	40.25
Gum, mucilage, sugar, and digestible fibre (heat-producing substances)	11.21	16.38
Indigestible woody fibre	10.44	5.84
Inorganic matters (ash)	7.75	7.61
	<hr/> 100.00	<hr/> 100.00
* Containing nitrogen	7.01	6.44

Oil-meal, if genuine, it thus appears, is identical in composition with the best decorticated cotton-cake.

No. 2, it will be seen, contained nearly 20 per cent. of oil, which is more than I ever found before in any kind of oil-cake.

The process of kiln-drying is resorted to for the purpose of preserving the meal in good condition. It imparts to the cake a peculiar and by no means unpleasant flavour, which is said to be much liked by cattle.

On the whole, oil-meal, when genuine, and of as good a quality as the two specimens analysed by me, presents a handy form of supplying cattle with decorticated cotton-cake; and as it is, moreover, cheaper than the thin cake, its use for feeding purposes is not only more convenient, but likewise more economic, than that of thin cotton-cake.

There is, however, a certain degree of danger in buying a powder, for rubbish of various sorts may be mixed with the meal by unprincipled dealers. But, on the other hand, the respectability of the dealer and chemical analysis afford the means of preventing this species of fraud.

As decorticated cotton-cake is likely to be extensively used for feeding purposes, I have thought it advisable to submit the mineral constituents which it furnishes on burning to a detailed examination.

The following results were obtained in my laboratory by my friend and pupil Mr. Gardner, of Shrewsbury, on analysing the ash prepared from several samples of decorticated cake :

AVERAGE COMPOSITION OF THE ASH OF DECORTICATED COTTON-CAKE.

Potash	.	.	.	.	.	39·045
Soda	.	.	.	.	.	none.
Chloride of sodium	.	.	.	.	.	none.
Lime	.	.	.	.	.	3·750
Magnesia	.	.	.	.	.	13·500
Oxide of iron	.	.	.	.	.	1·530
Phosphoric acid	.	.	.	.	.	39·649
Sulphuric acid	.	.	.	.	.	·930
Carbonic acid	.	.	.	.	.	·362
Soluble silica	.	.	.	.	.	3·252
Insoluble silicious matter (sand)	.	.	.	.	.	17·706
						<hr/> 99·724

Like other oily seeds, cotton-seed contains, it will be seen, a considerable quantity of phosphate of magnesia. In addition to these compounds it contains phosphate of lime and phosphate of potash, and other salts of potash.

The proportion of phosphoric acid in cotton-cake ash is very large, and that of potash likewise is considerable. Soda does not enter into the composition of the ash. For the purpose of supplying animals with bone-materials, it is a very valuable kind of food.

CONCLUSION.

The principal points of interest, in reference to cotton-cake, are collected together in the following short summary :

1. The best cotton-cake is richer in oil and albuminous (flesh-forming) compounds than linseed-cake, but contains less mucilage and other respiratory constituents.

2. The mineral portion of cotton-cake resembles closely in composition that of linseed and other oil-cakes. Like the ash of all cakes, it is rich in earthy and alkaline phosphates, and well adapted to supply animals with bone-materials.

3. As far as the indications of chemical analysis can be depended on, the best decorticated cotton-cake possesses about the same nutritive value as linseed-cake.

4. At the present time four distinct kinds of cotton-cake are offered for sale in the market, namely :

1. Thin decorticated cotton-cake.
2. Thick decorticated cake.
3. Common cake made of the whole seed.
4. Oil-meal (No 2 reduced to coarse powder).

5. The thin decorticated cake is a far better and more economic food than the ordinary cake, which is often quite unfit for feeding purposes.

6. Thick cake scarcely differs in composition from thin cake, but being hard, and $2\frac{1}{2}$ to 3 inches thick, it cannot be crushed by an ordinary oil-cake crusher, and therefore presents inconvenience to the consumer.

7. Genuine oil-meal is simply thick decorticated cake reduced to a coarse powder, and of course has the same composition as the cake from which it is made.

8. The composition, and with it the nutritive value, of different samples of cotton-cake is subject to considerable variation.

9. Decorticated cotton-cake and oil-meal, in comparison with other kinds of artificial food, are decidedly cheap feeding materials, and both, no doubt, ere long, will find that favour with the British farmer which a really valuable and cheap article of consumption is certain to command.

After the foregoing pages were in type, I received a note from Mr. John Fryer, Manor House, Chatteris, enclosing a sample of cotton-cake, and giving a short account of the death of a bullock that had been fed upon the cake and upon mangolds, barley-meal, and clover-hay. Mr. Fryer enclosed the following report of the veterinary surgeon :

“ Surgeon’s Post-mortem Examination.

“ Internal and external appearance healthy, nothing inflammatory. Paunch enormously distended with food. The manifold (I speak as butchers speak) crammed and jammed full of substance like tough dough rolled hard and adhering to the folds. Lower stomach quite empty. The duodenum, for twenty-four inches in length, entirely blocked up with two or more pounds of the irregular shapen concave and comminuted husks. Upon comparing them microscopically with the cake before eaten, they were found to be identical.”

This report leaves no doubt about the cause of death. The distension of the first bowels was evidently caused by cotton-husks, which, I am informed, were pressed so tightly into the bowel as to give externally the appearance of stones.

On examining Mr. Fryer’s cotton-cake, I found it to con-

tain more than half its weight of cotton-husk. I am inclined to think that this cake was prepared by pressing the refuse from the manufacture of decorticated cotton-cake with a small quantity of cotton-seed.

Cakes similar to that forwarded by Mr. Fryer have been lately sent to me for examination. I am glad to have reported them unfit for feeding purposes, having suspected the hard husks of common cotton-cake as likely to do harm. Mr. Fryer's case shows that my suspicion was not altogether imaginary, and confirms the opinion expressed above respecting the feeding value of ordinary cotton-cake.

REPORT ON THE CATTLE PLAGUE, STEPPE MURRAIN,
OR RINDERPEST.

By JAMES BEART SIMONDS, Professor of Cattle Pathology
in the Royal Veterinary College, London.

(Continued from p. 98.)

CASE 2.

May 6th.—After giving our attention this morning to Case 1, we went over to Zabrzez to inspect the cattle which we saw at M. Berl Krumholz's farm at the time of our first visit. Here we found that a young bull, two years and a half old, and one of the nine animals referred to at p. 647, *Veterinarian* 1858, as still being in quarantine, was the subject of the malady. The animal in question had only been observed to be unwell early this morning, being twelve days subsequent to the death of the last victim. The symptoms now present were spasmodic twitchings of the muscles, more particularly of those of the neck and shoulders. The spasms succeeded each other with great irregularity, but numbered on the average about ten in the minute. They were likewise accompanied with slight shiverings of the entire body. The skin was warm, as were also the legs, horns, and ears. The back was arched, and the animal stood with his legs gathered under the body, but frequently shifted his position as if in pain. His countenance, however was more animated than is generally seen in the early stages of the malady. There was a little turgescence of the vessels of the conjunctiva, but no intolerance of light. A slight mucous discharge flowed from the nostrils, and a short, but nearly inaudible cough was present. The breath was sweet, and the respiration scarcely disturbed. The pulse was increased to 80, and had more fulness than is usual in these cases.

All desire for food had ceased; rumination was suspended, and the bowels were in a relaxed condition.

6 p.m.—The symptoms are somewhat aggravated. The animal is down, and is more depressed than in the early part of the day. Diarrhœa has set in, and tenesmus is present. The twitching of the muscles is more violent and frequent. The cough is increased, as is the discharge from the nostrils; the pulse, however, remains the same.

7th.—There is no great change in the general character of the symptoms this morning. The diarrhœa is, however, more copious. The pulse is weaker, but its number is not further increased. The breathing is but little altered. The cough is of the same mucous character. The nasal discharge is thicker, and contains shreds of lymph. The eyes are heavy. The animal keeps laid a good deal, and when down appears sleepy. The spasmodic contractions of the abdominal muscles, which at times are considerable, give a peculiar tremor to the whole body, and interrupt the rhythmical action of inspiration and expiration. Pressure on the spine augments these spasms as well as those of the muscles of the neck and limbs. He refuses all food, but takes a little water.

6 p.m.—Except that the animal is weaker, and the alvine evacuations more fluid, there is no change which needs to be specially reported.

8th.—The spasmodic twitchings are less diffused than yesterday, and not so severe. The pulse is, on the contrary, more rapid and so weak as to be felt with very great difficulty, excepting at the heart. The respiration is also increased, and now numbers twenty-six in the minute; it is not, however, laboured. The cough, although frequent, is scarcely audible; it has the same mucous character. The muzzle is moist but cold, as are the extremities and horns, while the surface of the body is yet warm. The diarrhœa has passed into dysentery. The evacuations are now of a dirty-yellow colour, and remarkably fluid: they contain flocculi of lymph, and are occasionally streaked with blood, but are not particularly offensive. A sickly smell attends the patient. The eyelids are drooping, and a thick jelly-like mass of a pale straw colour has accumulated at the inner angle of each eye. This mass is evidently composed chiefly of fibrine, but the vessels of the conjunctiva are not turgid with blood. The animal has a greater disposition to keep laid, and often, while recumbent, turns the head to the side, as if suffering slight abdominal pain.

9th.—The spasmodic twitchings and the diffused tremors are no longer to be recognised. The prostration of strength is very great. The dysenteric purging continues unabated in severity. Tenesmus is also present, and the evacuations are very offensive. The abdomen is much pinched in. The respiration remains the same in number, but is occasionally accompanied with a nasal blowing-like sound. The discharge from both the nostrils and eyes is augmented in quantity: the eyes, however, still retain their transparency, and the

blood-vessels are but slightly injected. The pulse is not weaker than yesterday, but upon the whole a little more distinct. The ears, horns, and extremities are still a little warm. The animal takes a small quantity of water, and appears to be free from any acute pain.*

* The Commissioners decided to-day upon slaughtering the remaining eight animals in the quarantine, as two or three of them were giving indications of approaching illness. They also had in view the raising of the *cordon* at an earlier date than it otherwise could be, supposing the malady was allowed to take its ordinary course; for, as elsewhere stated, it has to be maintained for *twenty-one* days after the death or the killing of the last animal. The chief object in keeping up the *cordon* for this length of time is to prevent the possibility of a fresh outbreak. No newly-purchased cattle are therefore allowed to come on the farm, nor is any labourer, or other person, permitted to leave it. No straw or fodder of any kind can be removed: in fact, all the details are as rigorously enforced during these three weeks as while the disease exists.

The resolve of the Commissioners afforded us the opportunity of witnessing the form of valuing the cattle *for slaughtering* on the part of Government, their real value being greater than the estimated one. For this purpose a jury of three persons was summoned, consisting of the Burgomaster of the village and two other inhabitants conversant with the worth of cattle. They were not, however, allowed to come within 200 paces of the line of the *cordon*. The non-medical commissioner, M. Rucki, took his seat at a table placed on the line, and being furnished with writing materials, noted every particular of the transaction. The cattle were then brought one by one to within a short distance of the Commissioner, to be inspected by the jury, who asked a great variety of questions relating to their age, breed, and use for feeding, milking, or working purposes; which being satisfactorily answered, they made their award.

The first, a young heifer, was valued at about,	£	s.
	in English money	4 0
The second, also a heifer	do.	4 0
The third, a milking cow	do.	7 0
The fourth, a young steer	do.	3 6
The fifth, an older steer	do.	4 18
The sixth, a young bull	do.	4 0
The seventh and eighth, two heifers	do.	8 16
Total		£36 0

The skins of the animals were next valued at eight shillings each for the larger ones, and six shillings the smaller, which sums, we were informed, would be deducted from the gross amount; the proprietor being allowed to dispose of them as he thought fit, after they had undergone a disinfecting process, under the immediate superintendence of the Commissioners. This part of the ceremony being ended, the animals were led away to be slaughtered and buried, when the jury were permitted to approach the table to sign their award. One only of the three could write, namely, the Burgomaster, and he received authority to sign for the others. The appearance of these men was certainly picturesque, if not very prepossessing. They were very scantily clad, having on,

10th.—The symptoms are somewhat mitigated this morning, leading to the hope that the animal may possibly rally. The dysenteric purging is diminished in quantity, and the evacuations also are less frequent. The breathing is more tranquil, and the cough more audible. The pulse has sunk to 70, and has an increased tone. Each rising of the artery is accompanied with a peculiar jerking action. The discharge from the nostrils and eyes has not undergone any material change. The extremities and surface of the body are warmer, and the animal is evidently freer from suffering. He lies less; takes freely of water, and shows a little disposition to pick some fresh green clover, a handful of which we gathered for him from an adjacent field.

11th.—Scarcely so well to-day. Some blood is occasionally passed with the alvine evacuations. These are still fluid, have a foetid smell, are of a pale colour and contain numerous shreds of lymph. The abdomen is more pinched in. The pulse is rather quicker, as is the breathing, the expirations being at times accompanied with a slight grunt. The discharge from the eyes and nostrils is less in quantity, but the cough is more frequent. He has, however, eaten a little clover and drank some water, and stood up at intervals for a longer time than before.

This change in the symptoms made us most desirous of watching the case to its close, but the Commissioners ordered that the animal should be killed forthwith, as they saw no hope of recovery, and were anxious to remove the *cordon*, there being no cattle left on the premises, excepting the Steppe oxen, mentioned in a preceding part of this report as having some weeks since recovered from the pest.

Post-mortem Examination.—On removing the skin, the muscles of the body were found of their usual colour and integrity, and the areolar tissue throughout was likewise free from congestion. Commencing the examination of the internal organs at the nostrils, the Schneiderian membrane was observed to be much congested, more particularly that portion of it which is continued into the *posterior nares*, where it was extensively ulcerated. This ulceration could be traced from thence to the free edge of the *velum palati*. In places it was concealed by a thick layer of lymph, which adhered with tolerable firmness to the membrane beneath. The larynx, trachea, and bronchi were free from disease, as were also the lungs. The heart was healthy. It contained within its

scarcely any clothes except a long coat made of a coarse and thick woollen material of a dirty-white colour, which reached a little below their knees. The Burgomaster did not much differ from his compeers, except that he wore a leathern girdle, furnished with a pocket, around his waist, in which he carried his money, and of which, little as it was, he appeared very proud. Their legs were enveloped in pieces of linen tied on with string, and their feet were protected by roughly-made sandals, having very thin leather soles, being apparently of their own manufacturing.

ventricles a small quantity of blood, which was *partially coagulated*, the coagulum being very soft.

The tongue was healthy, as was also the pharynx; but the ducts of the tonsils were filled with effused lymph, the surrounding vessels being turgid with blood. The œsophagus, rumen, and reticulum were in a normal condition. The contents of the omasum were rather dry from retention, but no structural change had taken place in the stomach itself. The mucous membrane of the abomasum was slightly ulcerated in small-sized patches here and there, while nearly throughout its follicles were distended with lymph, and more especially towards the pylorus.

The mucous membrane of the small intestines was congested, the bowels themselves containing numerous flocculi of lymph. Several of Peyer's glands were ulcerated. In some, arrestation to this process had taken place, and the healing one had begun. All these glands were covered more or less with a thickish layer of effused lymph. The mucous membrane of the cæcum was extensively ulcerated at the blind end, and throughout the intestines it was thickly beset with scabs of a dirty yellow colour. Many of these scabs—the product of lymph-effusions—covered surfaces in which no disease could be detected. Other of the scabs had ulceration going on beneath them, while under several the healing process had commenced. They varied in size from that of a small pea to the end of the finger. They were also of different forms and thicknesses.

The colon was in a similar condition to the cæcum, as was likewise the rectum to within a few inches of its termination. These intestines contained no fæces, but were filled with a fluid of a yellowish colour in which floated many shreds of lymph. The liver was healthy, but the lining-membrane of the gall-bladder was in a precisely similar condition to that of the large intestines. The kidneys were pallid, but unchanged in structure. The bladder and genital organs were perfectly healthy. The brain and spinal marrow gave no evidence of structural change, but effusion of serous fluid had taken place into the theca-vertebralis.

CASE 3.

May 7th.—The animal, a very poor and weak heifer, was reported by the sentinel on night duty at the quarantine in Kamienica, to have been observed early this morning to be giving indications of the disease. The chief symptoms noticed by us on our visit consisted of spasmodic twitchings of the muscles of the neck and extremities in particular, associated with general shiverings of the body at irregular intervals; pulse 60, having a sharper beat than natural; a loathing of food; suspension of rumination; grinding the teeth; lax and copious fæces; depressed countenance; drooping eyelids; lopped ears; staring coat; arched back, and chilly surface of body. The animal also stood with its

legs gathered together under the belly. The respiration was, however, undisturbed; the vessels of the conjunctiva were uninjected, and the muzzle was moist. No tenderness along the course of the spine was evinced on the application of pressure.

At night, with the exception of increased weakness and the passing of liquid fæcal evacuations, there was no material change in the symptoms.

8th.—The pulse now numbers 65, and has lost its sharp beat; the breathing is a little quickened; the diarrhœa has passed into dysentery; the animal's appearance is very dejected; a discharge flows from the nostrils and eyes; the coat is staring; the spasm of the muscles is more intense; the extremities and body are cold, and the prostration of the vital powers is very considerable.

9 p.m.—The pulse has risen to 75, and can be felt only with difficulty in the arteries; the breathing has become very much quicker during the day, and now numbers 24 in the minute; the dysentery is profuse, and tenesmus is likewise present. The other symptoms remain about the same as in the morning.

9th.—The symptoms are all increased in severity, excepting that the tremors have nearly disappeared; the abdomen is much pinched in; small quantities of blood stain the alvine evacuations, which are likewise very fœtid; the pulse is remarkably tremulous, and the respiration is short and quick. The animal will, however, take a little water to drink.

10th.—During this day she struggled on against the disease, but sunk about midnight, being far too weak to rise for several hours before death.

Post-mortem, eight hours after death.—No congestion of the superficial vessels, nor change in the colour of the flesh was observed on the removal of the skin, nor was there much tendency to decomposition of the body. The blood, however, was *fluid*, and of a dark colour in all the large veins. Ulceration had commenced in several places on the dorsum and root of the tongue, especially around the bases of the conical papillæ. The fauces, *velum palati*, pharynx and larynx were also ulcerated here and there in patches of about the size of a shilling; the mucous membrane of the posterior nasal opening was intensely reddened, and studded with yellowish-coloured points from effusions of lymph into its follicles: the ducts of the tonsils were also filled to repletion with lymph. The lining membrane of the windpipe and bronchial tubes was but slightly congested, but in many places it was covered with *layers* of effused lymph. The substance of the lungs was healthy, as was their serous covering. The heart was rather flaccid: no blood was found in its ventricles.

On opening the abdomen some petechial spots were found on the omentum, but otherwise the serous membrane was free from any vascular

injection. The fourth stomach, and also the small intestines, presented a dark-coloured condition of their outer surface, which, however, was ascertained to depend on the congested state of their mucous lining, as seen through the other coats. The first stomach—rumen—was free from disease; but its epithelial lining could be readily peeled off in places, doubtless from changes which had taken place since death. This stomach contained some rather dry ingesta. A similar state of things was met with in both the reticulum and omasum, but no true *löser dürre* existed. The lining membrane of the fourth stomach—abomasum—was intensely reddened throughout, and its follicles crammed with lymph. Effusions of lymph likewise adhered in many places, as scabs of a dirty yellow colour, to the mucous membrane of this stomach.

The duodenum, near to the pylorus, was in a similar state to the fourth stomach, as were likewise the jejunum and ileum in several detached places along their course. Peyer's glands were free from ulceration, and several of them had every appearance of health. The mucous membrane of the large intestines was ulcerated here and there, while in other parts no change of structure could be detected. These intestines contained much mucus mixed with shreds of lymph. The liver was healthy in its substance, and the gall-bladder was filled with a greenish-coloured bile. Its lining membrane was free from disease, but thin bands of lymph could be drawn from out of many of the large biliary ducts. The urinary and genitive organs gave no evidence of disease. The brain and spinal marrow were firm, and presented no structural change. An unusual quantity of fluid, however, existed both in the ventricles of the brain and also in the upper part of the theca vertebralis.

In consequence of the occurrence of this case and of Case No. 1 in the same quarantine station, the Commissioners determined to slaughter the rest of the cattle, consisting of five, preserving only the animal in question for our special purposes. This resolve was taken on May 8th, and was somewhat hastened by the circumstance that all the animals were in very low condition and of little value, being the property of small farmers but one degree superior in position to the peasants. The greatest difficulty also existed in procuring sufficient food for them, and poor women, the wives of the proprietors, could be daily seen standing up to their knees in water in the mountain streams for hours together, with scarcely clothing sufficient to cover their persons, washing couch grass, which they had picked from off the land in order to feed the animals. The step was, doubtless, rendered necessary by the circumstances. It was nevertheless most painful to witness the lamentations of these poor women on its being carried into execution.

Shortly after the removal and slaughter of the animals, the quarantine station was set on fire, and soon razed to the ground.

CASE 4.

On the evening of May 9th, information was brought to the Commissioners that a fresh outbreak of the malady had occurred in the village of Kamienica. On hearing this, we were almost immediately on the spot, and found that a cow, one of five of the herd, was fast *sinking from the disease*. It was evident that she had been ill for at least two or three days, but had not been reported. The Commissioners expressed much dissatisfaction at this, and immediately took possession of all the animals, and sent them off the premises into quarantine. The key of the stable in which the cow had been standing was delivered over to the keeping of the military, and the *cordon* established.

We may here repeat, that if a proprietor conceals the fact of the appearance of the pest among his cattle, or has been in any way instrumental in bringing it among them when it prevails in the locality, the entire loss which he may sustain falls upon himself, the Government refusing to make any allowance even for those that are ordered to be killed by their officers. This course was, therefore, the one adopted in the present instance.

The most marked symptoms shown by the animal in question were—a profuse dysenteric purging; indistinct pulse; rapid breathing; surface of body and limbs cold; eyes sunk in their orbits; discharge of mucus mingled with lymph from the eyes and nostrils; staggering gait, and great prostration of strength. Indeed, on the way to the quarantine station she fell twice, although the distance was not more than three hundred yards. It was also with much difficulty that she was made to rise. In this condition she lingered on for about eight hours, when death put an end to her sufferings.

The principal lesions observed in making the *post-mortem* examination, were—ulcerations at the root of the tongue, with extensive turgescence of all the surrounding vessels; tonsils loaded with effused lymph, and likewise all the follicles of the fauces and contiguous parts. Large shreds of lymph also existed in the windpipe and bronchial tubes. The heart was pale and flaccid. The abomasum was not so much affected as in other cases we have quoted, nor was any portion of either the small or large intestines. Where diseased, however, the lesions of these viscera were precisely similar to those already described. The mucous membrane of the gall-bladder was extensively diseased, but the ducts of the liver were free from deposits of lymph. Excess of fluid existed in the ventricles of the brain and also in the spinal sheath. All the other organs were free from structural change.

CASES 5, 6, 7, 8.

The animals which formed the subjects of these cases were the companions of Case 4. Three of them exhibited the ordinary symptoms which are seen at the commencement of the pest on the morning of May 10th, and the other was taken ill during the next day. The character and progress of the symptoms in the first three were the same as are usually observed, and therefore they do not call for any particular remarks. The opportunity was afforded us of watching these animals during the whole of May 10th, the Commissioners allowing them to be kept for that purpose ; but on the following day, as soon as the only remaining animal (Case 8) was attacked, they were all slaughtered. The malady was quickly running its course at this time, and doubtless would have terminated fatally in all the animals within a day or two ; indeed, in one of them the symptoms were now so much aggravated, as to convince us that a few hours would suffice for the animal—a cow—to succumb to the pest.

The *post-mortem* examination, which we made in each of these cases, showed that in all essential particulars the morbid changes agreed with those we have already given in detail. Slight differences were observed both in the extent and location of the principal lesions, but these it is unnecessary to describe. Indeed a careful perusal of the cases which we have selected for embodiment in this report will, we hope, sufficiently explain the morbid changes, even to the medical as to the non-medical reader.

(*To be continued.*)

THE Chinese believe there is a word expressive of all excellence, so exquisite that no one can pronounce it, although it can be written and perceived by the eyes ; but they do not give it.

“GRAINS of truth are like grains of gold in the rivers of Australia—they must be shaken by the hands of patience and washed in the streams of honesty, or the fine gold will be mingled with impurities.”

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire, Feb., 1859.

NEW FACTS ON THE EFFICACY OF SETONS IN PLEURO-PNEUMONIA, &c.

By Mons. PETRY, Médecin Vétérinaire du Gouvernement à Liège.

IN the month of October a malady invaded the stock of a large farm in the environs of Liège. It showed itself by a slight cough and general gastric derangement, particularly meteorization. The veterinary surgeon who was first consulted thought he had to do with an attack of indigestion, and treated it accordingly. The malady, however, in a few days extended itself to the whole of the stock on the farm, consisting of 18 milch cows; 5 oxen and 3 heifers of 3 years old; 11 oxen and heifers of 2 years old; and 1 calf.

On the arrival of the author, who was now consulted, he examined three milch cows which had been separated from the others. He found them down, breathing with difficulty, and grunting audibly. Percussion and auscultation denoted hepatization of the lungs on both sides; the coat was staring, the muzzle dry, the flanks agitated, and at every fit of coughing the body was violently shaken; there was also meteorization to a certain extent. They refused their provender, but two of them drank a little cold water.

These three cases were considered as hopeless, but as some treatment was considered advisable, three long setons were inserted on each side of the chest, and a dose of sulphate of soda was prescribed for each. The next day, some hellebore root was inserted in the dewlap. This the author frequently employs in winter, but never in summer, on account of the swelling and gangrene which often result from its insertion. None were bled, experience having shown that bleeding tended to aggravate the malady, and accelerate its fatal termination, whenever hepatization has made any progress. On examining the remainder of the cattle, thirty-two in number, twelve were found to be affected. Some of these were bled to a moderate extent, and setons inserted in all. Four days after, the author made another visit, and to

his astonishment, he was informed that of the three cows which he had condemned, two had ruminated that morning, and the third had begun to feed, but rumination had not yet returned. The treatment was continued with the whole of these cattle, but the author did not visit them again, as they were left under the care of his colleague ; the whole of them, however, recovered.

The proprietor had asked M. Pétry's advice as to the inoculation of them as proposed by M. Willems, but his answer was that he preferred active treatment to this pretended prophylactic, in which he had no faith, and this decided the question.

SORGHO CONSIDERED AS FOOD FOR CATTLE.

AMONGST all the plants which have of late been recommended as food for cattle, the sorgho is that which has most attracted the greatest attention of the agriculturist. It has had its detractors, as well as its enthusiasts ; nothing, therefore, can be more appropriate than a report of its cultivation in the Canton Huy.

This plant, though, originally one of hot countries, is not altogether unknown, but like many others, has passed comparatively unnoticed. Sorgho was first introduced into the south of France, where it was cultivated as an alcoholiferous plant. Gradually it has spread to the north, where it is now extensively grown for feeding of cattle. In Belgium it is as yet little known, the agricultural journals having only given it a passing notice ; but the introduction of it into a neighbouring country gave some encouragement that it might succeed. To effect this, the administrative council procured some of the seeds, which were distributed in the spring of 1857. The result of these experiments was highly gratifying, and beyond all expectation. In 1858 these experiments were renewed on a larger scale, and notwithstanding the great drought of the summer, the consequence was to place the sorgho as one of the best plants as provender for cattle. Mons. H—, of Antheit, cultivated some very indifferent land, from which he had three crops : the first, 80 centimètres in height, the second one mètre, and the third one mètre ; a total of 2m. 80c. In respect of quality, it is as satisfactory as its quantity. Mons. H— has made an observation which is of great importance. Two adjoining fields of sorgho

were cut at the same time, the first two inches from the ground, the second five inches. Seven days after the shoots of the first were only six inches long, while those of the second were ten. This tends to confirm the opinion of Mons. Joignaux, that it should not be cut close to the ground when a second crop is desired.

An extract of a letter, dated December, 1858, from Prince de Looz-Corswarem, is as follows: "The results which I have obtained this year have evidently proved that the society, in introducing the sorgho into our canton, have rendered a great service to agriculturists, by enabling them to feed a greater number of cattle. This plant, which is superior to any other yet known, both in quality and in quantity, as forage, is easily cultivated, and with but little preparation. I have sown it on a meadow which had only been turned up with the plough, and that in a very dry season; nevertheless it attained a height of two mètres, and was devoured with great avidity by the cattle."

The report contains several more letters on the subject. They all agree as to the quality and quantity of this plant, and the great benefits which it is likely to produce, particularly in dry summers, as well as its adaptation to all sorts of land. In one instance, when it had not been cut, it attained a height of eleven feet. It is now cultivated in the provinces of Brabant, Limbourg, and Hainaut, from seeds obtained in the Canton of Huy.—*Extract from a report of the Agricultural Society of Huy, by M. D. Lamauge, Secretary.*

[The above plant is worthy of the attention of the English agriculturist.—*Translator.*]

Journal des Vétérinaires du Midi.

POLYPUS IN THE RIGHT NASAL CAVITY AND CANCER OF THE SUPERIOR MAXILLARY BONE OF A HORSE.

By M. CORR, Vétérinaire Militaire.

THE subject of this communication was an officer's charger, of the Anglo-Norman race. He had been six years in the service, without having been subject to any indisposition. During the year 1858, he was observed not to feed or masticate his food with his usual appetite and vigour, but was still in good condition. From time to time he presented symptoms of inflammation of the conjunctiva, but which disappeared.

On the 19th of October the horse entered the infirmary for a slight running from the right nostril; the gland on the same side was also tumefied. This discharge soon became more abundant and fetid, and at intermissions bloody. By percussing the bones over the sinus, the dulness of the sound diagnosed disease on the right side. The horse was now isolated, and treated accordingly. In the month of November a tumour was observed on the *zygomatic* process of the temporal bone. A blister was applied to this tumour; but it soon became indolent, and of the size of a hen's egg, in the centre of which there was a soft point. Several times the tumour was punctured, but without any good effect. In the mean time the discharge from the nose had greatly increased. On the right side it was of a white colour, thick, purulent, adhering to the sides of the nostril, and having such a fetid smell that it infected the stable. The respiration was performed by the left nostril only. The horse soon lost his appetite, and was quickly very much out of condition. From the existence of these symptoms there remained no doubt that the right nasal cavity was the seat of caries of the bone, and that it was also obstructed by a polypus; besides which, the tumour on the zygomatic process had extended to the external table of the superior maxillary bone. There was only one resource, which was trephining, so as to be able to ascertain the extent of the disease. The horse having, however, many of the symptoms seen in glanders, was condemned to be shot.

Post-mortem examination.—The skin having been carefully removed, one was struck with the amount of effusion which had taken place into the areolar tissue just below the zygomatic arch, which extended to the commissure of the lips. In the place of the zygoma there was found a whitish tumour, which grated under the scalpel, having a sarcomatous appearance. In the centre of it was a softened spot, and by pressing the finger on this it was easy to show its connexion with the frontal sinus. From it was discharged about a quart of white ichorous pus, having a fetid odour. On enlarging the opening, it was found that the bony substance of the upper maxillary, corresponding to the three last molar teeth, as well as the zygomatic process, was completely transformed into a semi-sarcomatous substance, assuming the shape of the bones thus altered, and presenting a thickness of from three to four centimètres. In order better to ascertain the position and extent of the lesion, the head was opened crossways, on a level with the orbital arch. On removing with care the maxillary bone, the last three molar

teeth were found completely separated from the alveoli, and only attached by a small filament, incompletely disorganized, to the sarcomatous mass, which filled the nasal cavity and the frontal sinus. The nasal septum was no longer straight on the left side, but on the contrary, convex, particularly at its junction with the vomer. This convexity was the result of the pressure of the polypus on the opposite side. On removing the septum, the right nasal cavity was laid bare, and the upper turbinated bone found to be intact. The mucous membrane, however, was considerably thickened, having small ulcerations on its surface. The inferior turbinated bone, in its upper half, was completely hidden, and pushed into the frontal sinus by a tumour measuring fifteen centimètres in length and seven in breadth. The anterior portion extended to the height of the second molar tooth; the posterior portion completely closed the posterior nasal cavity, so that there was hardly room to pass the handle of a scalpel into the pharynx. By removing the inferior turbinated bone, the tumour was completely detached, and the frontal sinus was thereby laid bare. The mucous membrane lining the sinus was very red, considerably thickened, and covered with a great many ulcers. The whole of the inferior parts of the frontal, and also of the maxillary sinuses, were obliterated, and in their place was found a heterogeneous mass of a yellowish white colour, to which were attached the three last molar teeth. This mass was a substitute for all the bony supports of the sinuses, as well as the alveoli. It had also invaded the palate, to the articulation of the maxillary, and united with the external sarcomatous portion on the outer plate of the superior maxillary which has been mentioned above. The alteration in the substance of the bones was so great, that the nasal bone and the corresponding part of the submaxillary, on being removed, could easily be divided at the seat of the lesion into two portions with a single cut of the scalpel. One portion comprised the superior maxillary, the zygoma, the lachrymal, the last molar tooth, and the posterior portion of the palatine bone; the other, the inferior portion of the maxillary, the five first molar teeth, and the anterior portion of the palatine bone. The alteration followed an eccentric course, for in cutting successively small slices from it, it was evident that towards the centre, that is, towards the frontal sinus, the tissue was exceedingly soft and easily separated by the pressure of the finger. Further on it was firmer, and not so easy to cut; the tissue presenting the appearance of having been formed of white and gray fibres crossing each other in all directions.

Receding from the centre, the tissue increased in density, becoming more difficult to cut, and irregular edges of the softened bones were found under the scalpel, which might be considered as forming the transition between the alterations and the bony tissue.

The tumour, which obstructed the superior third of the nasal cavity, was a pedunculated one, adhering to the bony substance of the inferior turbinated bone. This surface of attachment was of an elliptic shape, the greatest diameter of which was six centimètres in length, and the smallest from two to three. The corresponding bony substance presented a greater density, particularly as compared with that of the other portion of the same bone. The mucous membrane formed an elevation round the root of the tumour, and was much injected. There were also numerous ulcers on its surface, but they were small and shallow, and of a white appearance. The polypus formed a mass weighing altogether 500 grammes. It was very dense, particularly towards the root. The section discovered a mixture of a white and gray substance, of a fibrous nature; however, microscopic examination showed that it was composed of epithelial scales, the agglomeration of which gave it this fibrous appearance. The tumour was not covered by the mucous membrane of the nasal cavity, which must have been ruptured by the distension of it through the development of the polypus in the sub-mucous cellular tissue, which would explain the elevation of the mucous membrane around the root of the tumour.

These were the lesions which were found by the author in this extraordinary case. At first, by their complexity, they would lead to the supposition of two distinct affections, viz., a polypus and osteo-sarcoma of the maxillary bone, but the microscopic examination which Mons. Aubenas was kind enough to make showed that the polypous tumour and the alteration of the osseous structure were the results of one and the same cause.

Annales de Médecine Vétérinaire, Bruxelles, Jan., 1859.

ON CONGESTION.

By M. S. VERHEYEN, Professor, &c.

(Continued from page 285.)

Symptomology.—The four cardinal symptoms of inflammation are also those of hyperæmia. In the first stages, redness, swelling, pain, and heat, are the characteristics of active congestion, and are found in all important cases of this nature. These phenomena are accompanied by increased pulsation and functional and nutritive derangement. The first characteristic is the vascular injection. The parts which are accessible to direct observation present always the small arteries and veins gorged with blood, as may be seen in the cornea, which constitutes the redness. This may be diffused or circumscribed. The redness does not depend solely on the dilatation and engorging of the capillaries, but also on the red corpuscles of the blood, which no longer circulate exclusively in the centre of the vessels, their dissemination being uniform in the plasma. The accumulation in the vessels will necessarily increase the size of the parts affected with hyperæmia; but the exudation has the greatest share in the tumefaction. The pressure on the capillaries favours the effusion of the blood into the interstices of the tissues. In parts where the exudation can escape externally, or in a gland where it mixes with the secretion, the tumefaction is not usually great, but rather very insignificant. On the contrary, it is very considerable in the spongy parts. It also becomes *nil* in those organs where the absorbents take up the effused fluids. The pain is caused by the pressure and irritation of the effused matter on the nerves. The more an organ affected with hyperæmia is susceptible of expansion, the less will be the pain, but it acquires a great intensity in those where the tissues are compact and close. Increased weight will have the same effect in producing intense suffering. Compression will in these cases greatly relieve the pain.

The symptom of heat is sensible to the feel of the hand on exploring the part, but it is best ascertained by the aid of a thermometer applied to the external parts which are the seat of hyperæmia. It has for its primary source the afflux of arterial blood to the distended vessels, as

demonstrated by the experiments of Claude Bernard. The temperature does not increase, when, after the section of the cervical branch of the sympathetic, a ligature is applied to the carotid and the vertebral arteries. The graduation of the thermometer follows the degree of dilatation and contraction of the vessels (*Schiff*)—arteries ramifying in organs affected, which have no pulsation in their normal state, but will throb in an objective manner more or less distinct when affected with hyperæmia. This arterial phenomenon, indicative of active congestion, becomes very much marked in the plantar arteries of the horse in congestion of the feet. This has long since been regarded as a proof of active congestion; but if we analyse it, we can only recognise it as a passive phenomenon. In fact, the atrophy of the vessels permits the dilatation of their caliber; the blood flows without any check by the friction of their walls, which yield to the pressure. This pulsation will be greater in proportion as the atomy more or less pervades the large branches of the arteries, and the contractions of the heart are more or less energetic.

The anatomical characters of congestion are—that the blood still continues to circulate; that in death the redness disappears, and the membranes in which it existed are anæmiated. Pathology is therefore often unable to pronounce as to the existence of congestion by the inspection of the dead body. When, however, the congestion has had a certain duration, the organs are infiltrated and tumefied. They also offer a dark red colouration, which depends less on the plenitude of the vessels than on a dark pigment. Congestion of the intestines is an exception to this. The capillaries and the radicles of the veins present also an arborescent injection, which is sometimes accompanied by ecchymosis.

THE VETERINARIAN, JUNE 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE FIFTEENTH ANNUAL MEETING OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

THE event of the past month chiefly interesting to our readers has been the annual meeting of the profession, which was held, in accordance with the provisions of the Charter, on May 4th. Compared with similar gatherings in preceding years, a greater number of members were present, but this augmentation was rather produced by the attendance of those who had recently obtained their diplomas than by established practitioners. A goodly sprinkling of members from the country were, nevertheless, present; but we missed the faces of many, both from *town* and *country*, that we have been accustomed to see. Let the Council flatter itself as it may, there is no gainsaying the fact that, as a body, the profession is singularly lukewarm in the proceedings of its executive, and cares but little for the working out of the Charter. We trace the whole of this to the bickerings that are constantly occurring, and to the few and feeble efforts that have been made, from the time the profession became an incorporated body to bring about a more healthy state of things. Often have we deemed it our duty, as the exponents of the wants and wishes of the profession, to protest against the course taken by the Council, and seldom has there been a greater necessity for this being done than at the present time. It has always appeared to us that the first duty of a governing body, elected by the suffrages of the members, was so to legislate that not only dissensions might be avoided, but unity effected. Freedom of thought and independency of action are essential for such a purpose, and these we have ever been found ready to support. It is the

spirit of dictation, and the forming of parties to carry out preconceived views, which we have always condemned, come from what quarter they may. Argument, reason, justice, the good of the commonwealth stand for nought when a course of this kind is adopted, save to be sacrificed at the shrine of self-will. Fifteen years have passed since the obtainment of the Charter, and the old leaven still continues to produce as much acerbity as at first. It would take more time to recount the resignations of Councilmen, Examiners, Treasurers, &c., which have taken place within this period, than we can devote to the purpose. Even the "ABSTRACT" read at the last meeting announces the resignation, during the year, of two of the Examiners, and, more strange still, of the President. Explanations and solicitations by deputation are but a sandy foundation to support the integrity of any institution, and earnestly do we desire to see ours stand upon more solid ground. Unless, however, we have more consistency, more singleness of purpose, more firm resolve to sacrifice party spirit than hitherto has prevailed in the deliberations, the Council will "have still to regret that no distinctive rights have yet been conceded to the veterinary profession;" that "Her Majesty's services, both at home and in India, are still as freely open to the unregistered and unrecognised as to the registered and recognised members of the profession;" and that "the imposts of petty taxation, the exclusion from privileges granted to other but certainly not more deserving bodies, are evils which will" not speedily "cease to exist."

ON THE TITLE OF VETERINARY SURGEON.

It is with us, as with all journalists, that some of our correspondents desire to be *incog*. We, perhaps, might wish it were otherwise, but as they comply with our reso-

lution, that the real name and address of the writer shall be furnished, we have but little cause to complain.

We have given to the communication signed "Fiat Justitia" a prominent place, because of its importance. Furthermore, it would appear that we not been altogether free from blame in our classification of veterinary practitioners. Our reply is, that we have always appended the letters M.R.C.V.S. to the names of those who are *really* members of the profession, from their being in possession of the diploma of the Royal College of Veterinary Surgeons; and we had hoped that this distinctive would have been adopted by them, but many seem to be contented with the title of Veterinary Surgeon only. To those who have graduated elsewhere we have given this title; and, if it has been occasionally applied to others, such has been the result of inadvertence. Sometimes, however, V.S. has been used by us to signify Veterinary Student.

Another point we will take this opportunity of referring to, for we see in it the elements of much future good. It is our firm opinion, that if "the powers which be" would bring about the granting of appointments to her Majesty's Army, only to those who are members of the Royal College of Veterinary Surgeons, an important step would be gained, and one which would tend materially to elevate the profession in the estimation of the public. Perhaps we may be permitted to conjoin to this the inquiry; when is the long-anticipated warrant in favour of the promotion of the Army Veterinary Surgeon to make its appearance?

"Hope delayed maketh the heart sick."

Did we not believe that it has an existence, we might be disposed to think that the Army Veterinary Surgeon and the profession had been lulled into a fancied security that their interests were in safe keeping, and that it was but official routine which interfered with the dispensation of the promised boon. Scarcely had the Army Surgeon received

that elevation of rank and pay to which he was justly entitled, when we heard that, forthwith, equal justice would be done to our profession; but now, at the end of many months, we still find that no progress has been made; — a fact, which of itself would make us doubt that anything has been done to further the desired object.

Red-tapism has long prevailed *ad nauseam*; but we hope, now that our authorities have had so much experience in the necessity of promptness of action to beat up recruits to their new Parliament, they will throw more spirit into the several departments of the State, and by the time our next number is ready to be issued the long-anticipated warrant will be in our possession.

PROPOSED MONUMENT TO COLEMAN.

WITH reference to the proposal made by “Sinceritas” to erect a monument to the late Professor Coleman, we can only say that it would afford us very great pleasure to see thing done; but many circumstances militate against it. 1st. We are far from being a body sufficiently numerous to accomplish such an undertaking in a satisfactory manner. 2d. The time since the decease of the professor is now somewhat great, and many of those who knew him best have, like him, “shuffled off their mortal coil.” 3d. We are not yet sufficiently united. We should, however, be sorry to be thought unfavorable to the movement, and therefore pledge ourselves to co-operate whenever the matter is brought before the profession in a more definite form. In the mean time, our pages are open to the suggestions of others upon the subject.

ROYAL COLLEGE OF VETERINARY SURGEONS.

ANNUAL MEETING.

THE fifteenth annual meeting of the members was held at the College, Red Lion Square, on Monday afternoon, May 2d, to receive the report of the Council, and to fill up the vacancies in that body.

In the absence of Professor Spooner, the President, Mr. Greaves, Vice-President, was called to the chair.

The following members were present, Messrs. R. Bowles, Burley, Bailey, Bailey junr., Bickford, Broad, Braby, Cooper, Cherry, Cheesman, Cheesman junr., Charles, Cornelius, Corby, Dickens, Dobson, Dawson, Dring, Ernes, Field, Gamgee senr., Good, Greaves, Holl, Helmore, Holt, Haire, Hack, Henderson, Jex, Lawson, Lines, Lowe, Legrew, Morton, Meginnis, Molliner, Moon, Martin, Pritchard, Robinson, South, Simonds, Turner, Tremlett, Withers, Wilson, Woodger, Woodger junr., and Wilkinson.

Mr. Gabriel, the Secretary, having read the advertisement convening the meeting, the minutes of the last annual meeting were then read, and the following abstract of the proceedings of the Council during the year 1858-9 :

Abstract of the Proceedings of the Council of the Royal College of Veterinary Surgeons during the year 1858-9.

The proceedings of the Council during the past year have been so few, that a very abridged statement only will be necessary.

The reduction of expenses in the various departments of the College still continues without any appearance of a reaction, or of any compensatory substitution for it. It is, however, consolatory to a certain extent to find that at present there is but a small reduction of the balance in the Treasurer's hands; its amount, after defraying the expenses of the year, being £226 7s. 3d.

A subject which has received a considerable amount of the attention of the Council has been the endeavour to obtain the recognition by the College of a new veterinary school, established by Mr. John Gamgee in Edinburgh. To do so, however, it was necessary that Her Most Gracious Majesty's sign manual should be first obtained. This question appears to have been before the Government for some time; for, in

May 1858, a letter was received from the Secretary of State for the Home Department, requesting that an accompanying memorial signed by 114 of the leading agriculturists of Scotland praying for the recognition of the new School, might be laid before the Council, and their opinion taken thereon. After a long and animated discussion, the decision arrived at was, "That the Charter did not confer on the Council the power to interfere with the Schools;" and your Secretary was accordingly directed to transmit a reply to that effect.

In July following, the subject was again brought before the Council, when it was announced that in consequence of the opposition of the Highland and Agricultural Society of Scotland, the sign manual had been refused.

At a special meeting of the Council held in March last, a letter was read from the Secretary of the Lord Advocate of Scotland to your Secretary, stating that his lordship was desirous of having an interview with him, respecting the affiliation of the new Veterinary School at Edinburgh with the Royal College of Veterinary Surgeons. An interview accordingly took place in February, and the conclusion mutually arrived at was, "That the responsibility of granting the sign manual rested on Her Majesty's Government, and the responsibility of the result of the examinations on the Board of Examiners."

At the last meeting of the Council for the sessional year 1858-9, it was announced that the sign manual had been granted.

In the Board of Examiners some changes have taken place. Two gentlemen holding the highest rank in their profession tendered their resignation. Both were, nevertheless, requested to reconsider the matter, when fortunately Mr. Turner sacrificed individual convenience to professional duty, and withdrew his resignation; but Mr. Field declined foregoing the decision he had arrived at, and has consequently withdrawn from the Board.

Another of the oldest members of the Scotch division of the Board, Mr. Williamson, died last year; two vacancies, therefore, existed in the staff of the General Board. The English vacancy has been filled by the election of Mr. Richard Pritchard, of Wolverhampton, and the Scotch by the election of Mr. Benjamin Cartledge, of Sheffield.

Our esteemed President, being under the impression that some discourtesy had been done him, which was never for a moment dreamt of by those assembled around him at the time, resigned his office in the corporate body. His cessa-

tion, however, from the duties of the office only continued until a deputation waited on him to explain the affair.

The Registrar's report announces fourteen deaths as having occurred during the past year. Among the deceased are more specially to be regretted the late Mr. King, who had most efficiently filled the offices of Vice-President, Treasurer, and member of the Council; Mr. Williamson, one of the original members of the Scotch division of the Board of Examiners, and the veteran Mr. Watts, who was a Vice-President in 1847.

The admissions during the year have been thirty-three; the students being all from the London school. The number of members now on the list is 1416.

A new edition of the Register has been issued, and as far as the very imperfect information obtained from the body at large will admit of, it has been corrected up to the date of publication. As changes, however, are constantly taking place, and old errors have not yet all been eradicated, it is to be hoped that the profession at large will kindly aid the Registration Committee in remedying the defects.

The Council have still to regret that no distinctive rights have yet been conceded to the Veterinary Profession. Her Majesty's services, both at home and in India, are still as freely open to the unregistered and unrecognised as to the registered and unrecognised members of the profession. The imposts of petty taxation, the exclusion from privileges granted to other but certainly not more deserving bodies, are evils which it is fervently hoped will ere long cease to exist.

E. N. GABRIEL,
Secretary.

E. BRABY, TREASURER, in Account with the Council of the Royal College of Veterinary Surgeons.

APRIL, 1859.

Dr.		Cr.	
	£ s. d.		£ s. d.
Balance from last year	. 232 3 6	Fees to Board of Examiners	. 37 8 0
Examination Fees	. 271 19 0	Rent	. 60 0 0
Copies of Register	. 5 8 0	Rates and Taxes	. 23 18 3
Interest	. 3 15 11	Allowance to Secretary	. 100 0 0
		Advertising	. 8 19 11
		Printing	. 14 12 0
		Stationery, &c.	. 7 18 0
		House Repairs—Repainting Front, &c.	. 13 0 0
		Insurance	. 4 14 3
		Coals, Gas, and Wood	. 6 8 0
		Petty House Expenses	. 10 0 9
		Balance in hand	. 226 7 3
			<hr/>
			£513 6 5

Balance from last year	. 232 3 6
Examination Fees	. 271 19 0
Copies of Register	. 5 8 0
Interest	. 3 15 11

We, the undersigned, have examined the above accounts, and found them correct.

WILLIAM FIELD, Jun., V.S.,
JOHN ROALFE COX.

The *Chairman*—Has any gentleman any remarks to make upon the report and financial statement just read?

Mr. Ernes—I think the first thing to be done is to move that the report be received, and then it will be open for discussion. I was in hopes that some member not belonging to the Council would have made this motion; but as no one else seems disposed to undertake the task, though I am on the Council, and it may therefore be considered as my report, still I will move that it be received.

Mr. Broad—I beg to second the motion.

The motion was put and carried unanimously.

Mr. Ernes—I think the next motion is that it be adopted.

Mr. Bailey—I move that the report be adopted.

Mr. Helmore—I beg to second that proposition.

The *Chairman*—If no gentleman present has any remarks to make, I will put the motion.

The motion was then put and carried.

The *Secretary*—I beg to move that Mr. Helmore and Mr. Moon be appointed scrutators of the votes.

Mr. Jex—I beg to second the motion.

The motion was put and carried.

The *Secretary*—The next business is to proceed to the election of seven members of Council; six in the place of Messrs. E. N. Gabriel, E. Braby, T. Jex, F. R. Silvester, A. Cherry, C. Dickens, who go out by rotation, and one in the place of Mr. Constant, who has resigned.

Mr. Ernes—Before gentlemen fill up their papers, I think they ought to be made aware of the importance of this meeting, specially convened for the purpose of electing members of the Council. You are to elect responsible men, who are to govern the body corporate during four years, and you cannot be too careful to choose members who will attend to your business.

We have met here, I believe, now, for fifteen years, and the question is, what progress has the veterinary profession made during that time? Or what benefit has the Charter been to it? Have we always been careful in the choice of those who are to govern the body? Have we always done all that was necessary? Is not the veterinary profession somewhat behind? If it is not standing still, it certainly does not progress. It is very true that we have only one duty, and that we should perform without fear, and with justice to ourselves, who are the responsible parties, and to those that become candidates for the profession. I refer to the examinations. Have they always been a test, or are they a sufficient test at the present time? It is said they

are; but it might be doubted by some, and the question has been asked very recently by the Lord Advocate, whether the examinations by this body were a proper test? The examinations occupy one hour, and the board is divided into four sections, each occupying a quarter of an hour. I believe that this arrangement was originally made in imitation of the Royal College of Surgeons. But instead, as I am informed, of an hour being now occupied, the pupils have to be present four days. They are examined on each day on separate points. Now, I do not know whether it would not be worthy of this College to imitate this plan also, and to have our examinations more effectual, for it should be remembered that we are responsible, not only to the candidates, but also to the public. If, unfortunately, we send forth members who are not qualified, and who have not acquired that knowledge which will enable them to properly treat their patients, we certainly might be considered to be culpable, as they have nothing but our certificate to recommend them to the public. Therefore, I think, that in electing the members of the Council, who will afterwards have to regulate and fix the time and the manner of the examinations, and also have the appointment of the examiners, you cannot be too careful in the selection you are about to make.

Mr. Gamgee—In agreeing completely with my friend, Mr. Ernes, in what he says about the examinations, I should like to submit another question. Has this body any control over the education of the students? That is the first question; the examination is the second. We must bring the material to the board to be examined, before we can have it there, and we must put information into the man's mind before we can take it out. We have no right to ask a student for that which we have never taught him.

Mr. Robinson—Will you allow me to say that you are out of order. We have nothing at all to do with the teaching of the pupil; it is perfectly out of our province to teach the pupil at all. After he has been taught, then he comes to be tested by our examination.

Mr. Gamgee—Then you have no control over the education?

Mr. Robinson—No control whatever, except the test by examination.

The Secretary—It is necessary that the gentlemen to be ballotted for should be proposed.

The names of several gentlemen having been proposed and ballotted for, the scrutators retired, and after the lapse of a considerable interval they returned, and presented the following report of their scrutiny:

Mr. Gabriel, 51 votes; Mr. Braby, 46; Mr. Dickens, 46; Mr. Silvester, 45; Mr. Jex, 43; Mr. Cartledge, 36; Mr. Barrow, 32; Mr. Hunt, 26; Mr. Cherry, 19; Mr. Greaves, 6; Mr. Moon, 3.

The first seven were therefore declared to be elected; and upon drawing lots by the Chairman, Mr. Gabriel was reported as taking the place of Mr. Constant.

The proceedings were terminated with a vote of thanks to the Chairman.

SPECIAL MEETING OF THE COUNCIL, HELD MAY 11, 1859.

PRESENT: Messrs. Braby, Cheesman, Ernes, Gabriel, Jex, Legrew, Robinson, Silvester, Stockley, Wilkinson, Withers; Professors Spooner, Simonds, Morton, and Varnell.

Professor SPOONER having taken the Chair,

The minutes of the last meeting were read and signed.

A correspondence with the Home Office, in accordance with a resolution of the last meeting, in respect of the new veterinary school in Edinburgh, and in which the recognition of that school was announced, was read; and on the motion of *Mr. Wilkinson*, seconded by *Professor Morton*, it was ordered to be entered on the minutes.

Letters were read from Messrs. Cartledge and Barrow, returning thanks for their election on the Council.

The election of a President was then proceeded with.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Turner*—

“That Mr. William Burley, of Leicester, be elected President for the ensuing year;” and on the ballot being taken, that gentleman was declared unanimously elected.

Mr. Burley having taken the Chair, returned thanks for the honour of his election. The election of six Vice-Presidents was proceeded with.

The nominations were—James Moon, of Kingston, by *Professor Morton*; Robert Hunt, of Birmingham, by *Mr. Silvester*; E. Bailey, of Leicester, by *Mr. Ernes*; J. Carless, of Stafford, by *Professor Varnell*; W. A. Cherry, of London, by *Mr. Turner*; W. Mavor, of London, by *Professor Simonds*; W. Helmore, of Stratford, by *Mr. Gabriel*; W. Richardson, of Peterborough, by *Mr. Legrew*; and W. Bland, of Boston, by *Professor Morton*. The result of the ballot was as follows:

For J. Carless, 15; J. Moon, 14; W. Mavor, 13; W. Helmore, 13; W. Richardson, 13; W. Bland, 10; E. Bailey, 7; R. Hunt, 5; and W. A. Cherry, 3. Messrs. Carless, Moon, Mavor, Helmore, Richardson, and Bland, were then declared duly elected.

It was moved by *Mr. Jex*, and seconded by *Professor Spooner*—

“That Mr. Gabriel be elected Secretary.” And on the ballot being taken, Mr. Gabriel was declared to be unanimously elected.

It was moved by *Mr. Robinson*, and seconded by *Mr. Turner*—

“That the thanks of the Council be given to Professor Spooner for his able services as President for the past year.” Carried by acclamation. Professor Spooner returned thanks.

By order of the Council,

E. N. GABRIEL, *Secretary*.

EXAMINATION OF STUDENTS.

THE following gentlemen, students of the Royal Veterinary College, having undergone the necessary examination for a diploma, were admitted members of the body corporate at the following meetings of the Board of Examiners:

April 27th, 1859.

Mr. I. J. Cheesman	.	Wandsworth, Surrey.
— J. M. Axe	.	Henham, Herts.
— J. Freeman	.	Keyingham, Yorkshire.
— C. S. Hirst	.	London.
— J. K. Haire	.	Humber Lodge, Yorkshire.
— J. Denney	.	Roughton, Norfolk.
— C. J. Dring	.	Filkins, Oxfordshire.
— J. Thornton	.	Wintersett, near Wakefield.
— J. R. Scruby	.	Royston, Cambridgeshire.
— R. Knowles	.	Gedrey Hill, Lincoln.

April 28th.

Mr. H. Dunsford	.	Exeter, Devon.
— T. J. Lang	.	Northtawton, Devon.

Mr. J. E. Cornelius	.	Plymouth.
— W. Wilson	.	Berkhampstead.
— A. H. Santy	.	Lynn, Norfolk.
— R. Marshall	.	London.
— W. Heaps	.	Preston, Lancashire.
— E. Bailey	.	Leicester.
— J. Coulson	.	Stokesley, Yorkshire.
— M. Hack	.	Stamford.
— J. R. Hill	.	Exeter.
— T. Redford	.	Horsham.

April 29th.

Mr. P. Gadd	.	Birmingham.
— C. Holt	.	Northallerton.
— A. Bickford	.	Kingsbridge, Devon.
— W. Aulton	.	Mercaston, Derby.
— H. Blunt	.	Hannington, Northampton.
— J. Martin	.	Chesterfield.
— W. Good	.	Tenbury, Worcester.
— C. H. Martin	.	London.
— F. Eastwood	.	Preston, Lancashire.

April 30th.

Mr. M. Hedley	.	Middleton, Yorkshire.
— J. H. Stickney	.	Boston, U.S.
— E. Mulliner	.	Ellesmere.
— W. H. E. Boyden	.	Boston, U.S.
— J. Pring	.	Bristol.
— W. C. Joseph	.	Dublin.

The following gentlemen, having passed their examination in Edinburgh, May 11th, 1859, have also received their diplomas and been admitted members of the College.

Thomas Taylor	.	Manchester.
David Paley	.	Ryhill, Yorkshire.
James Nathaniel Hasham	.	Salford, Manchester.
William Taylor	.	Mothley, Yorkshire.
Joseph Hewitt Welsby	.	Sutton, near St. Helen's, Liverpool.
William Malcolm Reid	.	Slashnie, Aberdeenshire.
Alex. Courtenay Muir	.	Aberdeen.
William Appleton	.	Liverpool.
James Irvine Lupton	.	London.

Veterinary Jurisprudence.

BRISTOL NISI PRIUS ASSIZE.

(Before Mr. BARON WATSON).

SATURDAY, *April 2d.*

BUTSON *v* BADCOCK.

Mr. Collier, Q. C. and *Mr. Stone*, instructed by *Mr. Clifton*, were for the plaintiffs. *Mr. M. Smith, Q. C.*, and *Mr. Kingdon*, instructed by Messrs. Cleave and Co., for the defence.

Mr. Stone opened the pleadings. Charles Butson was the plaintiff and John Badcock the defendant. The action was for breach of warranty of a horse; for money had and received and upon an account stated. The defendant denied the breach and denied the warranty.

Mr. Collier stated the case to the jury. This, as they had heard, was a horse cause; the plaintiff, *Mr. Butson*, was a livery-stable keeper of Clifton, in a large way of business, and a most respectable man. The defendant, *Mr. Badcock*, was a wine merchant at Crediton, and rather a sporting sort of gentleman, and both the parties, therefore, were well acquainted with horses. They had been long well-acquainted with each other and had had dealings together. In December last *Mr. Badcock* had a mare he wanted to sell and *Mr. Butson* was inclined to buy her. He wanted her as a saddle-horse, for the purpose of letting out to gentlemen to ride. At first *Mr. Badcock* thought he should not be able to let the plaintiff have the mare, as there was another gentleman about her, but on the 16th of December he wrote to *Butson*, to say he had just received a note from the gentlemen in question that he should not want the horse. If *Butson* liked to have her, her price was £40, and he added she would be worth £80 when subdued to easy shoeing. *Mr. Butson* called on the defendant about the mare. *Mr. Badcock* admitted that she had certain failings; she was obliged to be thrown in order to be shod, and she would not go in harness. He was asked this question by *Mr. Butson* very particularly, whether the mare was sound and quiet to ride? *Mr. Badcock* said she was as sound "as a bell," and perfectly quiet to ride, and thereupon a deal was come to. *Mr. Butson* was to pay £40 for the mare in this way: he gave a chestnut horse which he warranted sound, of the value of £20, and he was to pay the rest in money. In consequence of a letter from the defendant, *Mr. Butson* went to Exeter and saw the mare. He had known *Mr. Badcock* so long, and had such confidence in him, that he had not troubled to see the mare before. He now looked at the mare. She had not been shod for some time, and her hoofs were very much grown out, so that the plaintiff could not examine them very well. She was a good-looking mare, however, and *Mr. Butson* thought she would suit him very well. She appeared to be sound at that time, and he took her home. The mare turned out to be unsound, and in several ways. The first thing was that when her hoofs were scraped, it was found that she had corns of long standing, and it was necessary to blister them from time to time, and when she was ridden much she went lame occasionally. It was plain that *Mr. Badcock* knew of the corns, and that was the reason why the mare's hoofs had been let

grow to such an extent. However, Mr. Butson would not have wished to have withdrawn from his bargain on account of the corns only, though he wrote to Mr. Badcock to complain about them. But things went on from bad to worse. The mare was not sound so far as corns were concerned, yet if that had been her only fault the jury would never have heard of this action. But there were one or two other objections to the mare, and one was that no one could ride her, though Mr. Badcock had said she was so quiet that he rode her hunting with a snaffle bit only. Mr. Butson lent her out once or twice to Captain Maude, a gentleman who was a cross-country rider, and indeed steeple-chase man, and she carried him in an involuntary steeple-chase through the streets of Bristol, and almost broke his neck. Fortunately, however, for the people of Clifton, the mare died shortly afterwards, the immediate cause of her death being inflammation of the lungs. Upon her being opened by a veterinary surgeon, it was discovered that she laboured under chronic disease of the lungs, the structure of one being entirely altered; and the evidence of the surgeons would show that the disease must have existed for months, and that the mare was in a consumption when she was sold. The learned counsel concluded by calling on the jury to give the plaintiff such damages as the loss he had sustained would entitle him to.

Mr. Butson, the plaintiff, deposed that he formerly kept the inn at Highbridge, and knew the defendant, whom he had dealt with for wines and spirits; on the 7th December defendant was at his yard at Clifton; he said he had a mare which would just suit him, but he could not sell, as he had a person down in the country about her; witness said he did not care particularly about buying, but he had a chestnut horse he had taken in exchange which he wished to dispose of; they looked over the stables, but came to no deal; defendant said, "This mare, were she subdued to shoeing—for we are always obliged to cast her for shoeing—would be worth any money." On the 10th December witness received a letter from the defendant, dated the Swan Inn, Bridge-street, stating that the person who had been about his horse did not intend to take her, that the lowest price would be £40, and that were she subdued to shoeing she would be worth £80; witness went and saw defendant about her, and told him that he did not want her, as he had a chestnut horse; told defendant that the horse was had from the repository, and was booked at 20 guineas, and warranted sound, and that he would warrant him sound, and said, "Is yours sound?" He replied "Yes, as sound as a bell," and he further said that she was very quiet to ride, and had been ridden hunting by him with a snaffle bit; they agreed for the purchase of the mare, which plaintiff was to give the horse and £20 for. When they parted it was on the understanding that defendant was to send the mare to Bristol by rail, but on the 12th of December he (plaintiff) received a letter from him, saying, that, as the mare was very valuable, he thought, upon reconsideration, that he had better meet him at Exeter and see her, and if he liked her he could take her back with him by the third-class train; on the 13th, witness went to Exeter and saw the mare; she was in a rough state, as if she had been turned out, and her feet were very long; did not have her examined by a farrier, as he had confidence in Mr. Badcock; he (plaintiff) owed Mr. Badcock, at the time of the deal, £11 10s. for wine, and it was agreed that he should take the mare at £40, giving his own horse, valued at £20, and his acceptance for the balance and the wine—£31 10s. On the Wednesday following the receipt of the horse at his stables, witness had the mare shod by Braybrook; his attention was then called

to the state of her feet; she had corns in both feet; in consequence of that he wrote to defendant, stating that the mare had corns, which would take £20 off her value, as she could not be warranted, and hoping that he would make him some allowance on account of it; on the 20th of December, received a letter in reply, dated 17th December, in which defendant pledged his honour that he had never known the mare to have corns, and that if she had any they must have come on after her last shoeing, and would be easy of extraction; he added that if she had but three legs to stand upon she would be worth the money to breed from; the letter further stated that so far from being asked for any allowance, he should have to ask for some himself, as the chestnut nag had pulled down the manger, and "kicked up Bob's a dying" (a laugh), and that in driving him there would never be any need of a lantern to light him home at night, as he struck fire at every stone he came to, and it would not be long before he went down on his knees instead of his feet (laughter). The plaintiff went on to describe the difficulty experienced in riding the mare, as she was hot and fidgetty; shied when he was on her, and on one occasion bolted with him; after her shoeing he noticed that she went lame, and he had her shoes taken off, and poulticed her feet; witness's foreman called his attention to the state of the mare on the 11th of January, and he observed that she was not quite right, and sent for Mr. Nathaniel Leigh, the veterinary surgeon; on the 16th of January, wrote to the defendant to inform him that the mare was dangerously ill from inflammation of the lungs, and that Mr. Leigh had a very bad opinion of her. The plaintiff went on to state—The mare was never a good feeder after I had her; she died on the following Tuesday, the 19th, and I then wrote to Mr. Badcock to tell him that she was dead, that Mr. Leigh was going to open her, and that I would call for him to come and see her opened; he wrote, in reply, that he should like to attend at the opening, but was very busy; and could not command the time: and he further said he was sorry to say that he had lost about £6 on the horse, as he had sold him for £16 5s. and added "it is a bad job on both sides;" attended at the opening, and went next day to the Swan and saw the defendant, and proposed to him to settle it in a friendly manner; said to him "Let us go to Canterbury," which meant to divide the loss (a laugh); he declined to do so, and I then offered to refer the matter to anybody, or to call in the landlord; he would not consent, and I said, "Remember, Mr. Badcock, you warranted her sound;" he persisted that he did not; I told him that if he had made her up fit for a nobleman she would never have passed the veterinary surgeon, as she had a sidebone in the off fore foot; he said he had spoken to his veterinary surgeon, and he had told him that that was no detriment to her; I reminded him that he had also warranted the mare quiet to ride, and he replied "Yes, I have ridden her to hunting with a snaffle bit;" afterwards said to him, "You don't seem disposed to settle," and he said "No, I must consult my solicitor first;" on the 26th of January wrote to him, informing him that unless I heard from him before Monday I should place the matter in the hands of my solicitor; received a letter dated 27th from defendant, stating that he was prepared to defend any action, and advising me, before I threw away my money in law, to remember that he had distinctly refused to warrant the mare, and had referred me to the breeder for information respecting her.

Cross-examined—I am not a horse dealer; do not buy and sell a good many; did not buy the mare for sale, or I should have returned her when I found that she had corns; when we were at the Swan it

was not agreed that he was to send up the horse for me to see her and to show her to a friend; he was to send her up, and if I did not like her I was to send her back, and we were to pay the carriage between us; he did say something about Mr. Adams the breeder, and that I might write to him if I liked, but I did not do so, as it was no business of mine; he did not tell me she was nervous or shy; he did not say he would not warrant her, though he believed her to be sound, and that I might refer to the breeder, Mr. Adams; do not remember his saying that he bought her without a warranty, and as such would sell her; told him that my cob was sound, quiet to ride and to drive; dare say I told him that he was a splendid walker, for he was a good goer; when I saw the mare at Exeter she was not very nervous; she was quiet; she would not allow me to take up her hind feet; a Mr. Rookes, who was there, said to me, after the mare was booked to go by the train, "I should have bought the mare only that she was so very nervous;" did not say anything to Mr. Badcock in any of my communications about the mare being unquiet; she was a very vicious brute, and would bite and kick at people in the stable; Captain Maude rode her five or six times; he had agreed to take her for the month; he told me that she ran away with him twice, and I know she broke her martingal.

Re-examined—I thought her a nice mare, and tried all I could with her; my reason for parting with my own nag was that he was not big enough for me; and I did not want him.

Thomas Budgett, foreman to the plaintiff, remembered the mare being brought home on the 13th January; she was rough, and her hoofs were unusually long; when she was shod observed that she had corns; should say that they had been some time coming on; noticed, after she was shod, that every time she came out the mare was lame, but as she warmed it went off; in seven or eight days she went dead lame, and her shoes were taken off and her feet put in linseed meal poultices for three days; after that she went sounder, but she was never sound; she was a bad feeder, and I fancied, when I gave her water in the morning, that she drew her breath very short; she got worse, and the doctor was called in; she was not a quiet horse; she would not let any one mount her who was not a good rider; she never bolted with me, but I had my suspicion more than once that she would if she had the chance.

Cross-examined—She was a bad-tempered animal, and I found it out directly, and told my master of it.

George Braybrook—I am a farrier, and have been in business twenty years; remember shoeing the bay mare in question when she came into plaintiff's possession; her hoofs were grown an extraordinary length; I never, in my experience, had seen a hoof so long before; she could not have been shod for three or four months; pared her feet as much as was requisite, and discovered a corn in each foot of largish dimensions; the one in the off foot was of extraordinary size; the corns would make a horse go lame; in four or five days afterwards ordered the feet to be put in poultices; should say that the corns had been in the feet for twelve months; they could not have grown since she was last shod; do not consider that she was a sound mare.

Frank Bryant—I was asked by Mr. Butson to look at the mare; she was a very good-looking mare, but she rode very impatient and very hot; finding that she was irritable in the ride, I took her into the street, and she started off with me down the street at a smart gallop; she was not a safe horse to ride.

Cross-examined—I could see what she was at once, and so could any one who was a judge; told Mr. Butson what she was.

Capt. Maude deposed to having agreed to hire the mare of Mr. Butson at £8 per month; she was a very nice-looking mare; when I rode her the first time I did not like her very much; rode her three or four times, and she went more like a mad thing than anything else.

Mr. Collier—Will you describe how she conducted herself.

Capt. Maude—Well, she ran away with me in the first place.

Mr. Collier—But you stopped her?

Capt. Maude—O yes! I stopped her with some trouble.

The Judge—Why did you ride her again?

Capt. Maude—Because I didn't choose to be beaten (a laugh).

Mr. Collier—Well, did she beat at last, or did you?

Capt. Maude—Well, I can't say, I'm sure.

Mr. Collier—Did she run away with you again?

Capt. Maude—O yes! she broke her martingal, and had a new one; she did not bolt with me after that, but I believe that she would have run away if she had not had a martingal.

Mr. Collier—You could manage her with the martingal?

Capt. Maude—Well, I could just hold her.

Cross-examined—I found out what she was the first time I got on her back, and told Mr. Butson of it.

Nathaniel Leigh—Am a veterinary surgeon, and was called in on the 12th January to attend the mare; she had inflammation of the lungs, of which she died on the 19th January; opened her after death, and found her lungs in a high state of inflammation; and there was chronic disease also in the left lung; it must have been of many months' standing; should say more than a twelvemonth; the organic structure of the lung had become changed; it was a very great unsoundness.

Cross-examined—The high state of inflammation was recent; the acute inflammation might have been brought on by hard riding; in chronic inflammation there would be a very peculiarly marked cough; a man accustomed to horses, if the mare coughed, must have discovered it at once.

Re-examined—The extent to which a cough will show in chronic inflammation must depend a good deal upon the diet and treatment of the animal.

John Kent—Am a veterinary surgeon, and have been in practice forty-six years; produce a piece of the lung of the deceased mare, which I received from Mr. Leigh. [The witness produced the preparation to show that the lung had become solid instead of porous]. A lung could not have become in that state in a sort time; it probably had originated in bronchitis; the lung might have been in that condition for six months or five years; sometimes an animal might have that extent of organic disease without any cough, unless put to violent work.

Cross-examined—The end of such a disease is death, and nothing but death; I have known animals die from such a state of lung without having any cough.

Mr. M. Smith then addressed the jury for the defence. He said the real question which they would have, by their verdict, to determine, was whether or not a warranty was given with the mare; there was no plea on the record denying the unsoundness,* and their inquiry would there-

* Mr. M. Smith did not say "there was no plea on the record denying the unsoundness," but that "the unsoundness was proved by Mr. Kent to his satisfaction, therefore he admitted it, and should call their attention solely to the warranty."

You may rely on the correctness of my version, and should you notice the trial please to insert it on my authority.

JOHN KENT.

fore he confined to the warranty; and he thought that by and by, when they came to hear all the facts of the case, and to weigh the evidence of Mr. Badcock, whom he should call before them, against that of the plaintiff, they would have no difficulty in determining on which side the truth lay. He would ask them whether it was conceivable that Mr. Butson, if the defendant had given him a warranty, would have acted as he did. Letter after letter did the plaintiff write to the defendant, and yet not one word did he say about a warranty, or about the tremendous difficulty experienced in riding the mare. If there had been a warranty, would not his conduct have been very different? would he not, so soon as the corns and the lameness were discovered, have written something in this way: "I hereby give you notice that the mare which you warranted to me proves to be unsound and unquiet to ride?" The real solution of the case was that Butson, being a man of experience, bought the mare on his own judgment. It was very well known that men who were judges of horses frequently preferred buying without warranties, because they knew that a warranty always sent up the price, whilst if they really understood their business their judgment in the main would prove right. The learned counsel then read the correspondence between the parties, and examined and criticised the evidence, contending that the whole course of the transaction showed clearly that there could not have been a warranty. Mr. Badcock would distinctly tell them, on his oath, that he positively refused to give a warranty. Mr. Badcock was a very respectable man; he was a wine-merchant in a large way of business, and he had been in the habit of supplying the plaintiff with goods. Did the jury think it likely that the defendant would have irritated a man who was his customer by giving him a warranty which he knew he could not keep? Mr. Badcock had bought the mare without a warranty, and he refused to give a warranty himself; he invited the plaintiff to come and see and examine the mare, and referred him to the breeder for any information he might want. The plaintiff did see the mare and examine her; he bought her on his own judgment as a speculation, and now, the mare having died, it might be through some indiscretion on his part, some want of care in her management, he turned round upon the defendant and said—"I shall look to you; you gave me a warranty, and on you I shall throw the loss." He (the learned counsel) submitted that that was a course of dealing which the jury would not sanction, and that after they had heard all the facts they would have no difficulty in returning a verdict for the defendant.

At this point, it being near seven o'clock, the court adjourned.

MONDAY, *April 4th.*

The learned Judge sat at half past nine o'clock.

BUTSON *v.* BADCOCK.

The trial of this cause was resumed, and the following evidence was called for the defence:

John Badcock deposed—I am the defendant, and carry on business as a wine and spirit merchant at Crediton; have occasionally had dealings with the plaintiff, who formerly lived at Highbridge; about the 8th or 9th of December last, I called upon him at Bristol respecting a small account he owed me; he invited me to go into his stables, and as I was looking over his stables, I told him I had a bay mare that I thought would suit him, but I could not offer her to him, as she was under offer

to a gentleman at Torquay, who had deposited £5, but had an option of choice. I asked him if he was open to buy, and he said, "O, yes, I am always open to buy if I can get anything by it;" the next morning I received a letter from the gentleman, declining the mare, and I saw plaintiff at the Swan about her; told him that the lowest price of the mare was £40; he said, "If I have an inclination to buy her, will you draw upon me for a couple of months?" and I said, "Oh, yes, for two months, or three;" he then asked me the particulars about the mare, and I described her as well as I could; he said, "What makes you sell her?" and I said, "She's a Tartar at being shod, so much so that we were obliged to throw her to be shod;" I further said, "If this vice or difficulty could be got over, she is an invaluable mare, as she is an excellent huntress;" he then said, "Will you buy my cob that you saw yesterday?" I said I could not say, as I had only taken a casual view of him, and I asked, "What sort of an animal is he?" he said, "He is an excellent walker, and a splendid trotter;" I said, "Can he gallop?" He said, "I really cannot say, for I have never seen him gallop, but I believe he can, as some gentlemen have borrowed him to use hunting, and they appeared pleased with him;" I said, "I suppose he does not spurn; he does not kick the stones;" he said, "Oh no, for we have driven him too much about the streets of Bristol, where there are plenty of stones;" he said, "I suppose your mare is quiet to ride?" I said, "Oh, yes, I have found her perfectly quiet to ride; I have ridden her a-hunting so many times, and have ridden her in a snaffle;" I also said, "You must please distinctly to understand, Mr. Butson, that I do not warrant her," and added, "Although I do not warrant her I believe her to be perfectly sound;" I said, "I bought this mare from Mr. Adams, of West Yeo, Witheredge, the owner and breeder, to whom you are at liberty to write and inquire all the particulars respecting her;" I added, "I bought her of Mr. Adams without a warranty, and as such I sell her; I should tell you, Mr. Butson, that when she is fresh the mare is shy and nervous, particularly with strangers;" he said, "I suppose there is no vice?" and I said, "None that I am aware of, except that of being shod, and that, in reality, I have not seen;" he said he should like to come and see her, and asked how he could manage; I said it would not be much for him to come down to Exeter by train, and I would meet him there: then a thought occurred to me, and I said, "I'll tell you what I will do. I will send the mare up to Bristol for you to examine if you please, and if you think proper, you can take her to your veterinary. If you should approve of the mare, you can send me down your cob at £20," the price that I would give him, and I would send up the mare and draw on him for the £20 and the bill he owed me; I said, "Mind, if you don't approve of the mare, you must pay the carriage of her back again, and then there will be no harm done;" he said, "Agreed, Mr. Badcock. Nothing can be fairer." Nothing was said about his warranting the cob. Afterwards wrote to him, and he came up to Exeter, and went to the stable to see the mare; he went up the side of the stable, and I advised him not to do so, as she was so very shy, but he took no notice of the request, and handled her; she was afterwards taken out of the stable into the road, and put through all her paces. The plaintiff looked at her legs; believe that he took up her fore legs and put his hands on her hind legs; the mare shied off, as was her habit; remarked to him that the mare was shy and nervous, particularly with strangers. He said, "Oh, that was nothing, his man (or men) would quickly take that out of her." When the man was riding her to show her paces, the plaintiff observed that she was

beastly fat, and must have a good dosing to get her into condition; after that we went to the Railway Hotel, and after luncheon I said, "Mr. Butson, is it to be a bargain." He said, "Oh, yes." I said, "Then shall I draw on you at two or three months?" and he said, "Three, if it makes no difference to you." My stable-man brought the mare into Exeter; he led her in, riding another mare. The defendant then deposed to the correspondence between him and the plaintiff, and said, after the mare had died I met the plaintiff at the Swan; expressed my sorrow at hearing that the mare had died. Plaintiff said, "What are you going to do about?" I said, "What do you mean, Mr. Butson?" He said, "You know you warranted her." I said, "You won't dare say so." He said, "She is nothing but a patched-up mare." I said, "On my honour, Mr. Butson, I pledge you that the mare never had a teaspoonful of medicine, nor had she a symptom of illness after she came into my possession before I sold her to you." He said, "It is all humbug, she's a patched-up mare, and you know it." I said, "I'm not going to be insulted in this way; if you talk to me so I shall leave the room." He said, "Well, then, if you didn't warrant her, you said you believed her to be sound." I said, "I grant you that. I did say I believed her to be sound, and I do to this moment. You have been dosing this mare, perhaps exposing her to draughts, or through some indiscretion you have brought on inflammation, and you want to throw the loss on me, but you will not." He said, "Come, we'll have no unpleasantness over it. I'll leave it to the landlord, or any one you like. I propose we go to Canterbury." I asked what he meant, and he said, "To divide." I said, "Certainly not. You have not the slightest claim on me. You bought this mare as a speculation, and if you had made £60, £70, or £80 of her, you would not be for dividing with me the profit." He said, "I never calculated upon making more than £50 of her." I had ridden the mare hunting with a snaffle, and she had gone very comfortably indeed. When I sold her I had not the slightest idea of there being any disease whatever in the mare. Had not the slightest idea of her having any corns.

Cross-examined—I bought the mare in March or April, 1857. On one occasion, when hunting, she hitched her foot in the hedge in what is called a steeper, which wrenched her foot a little, and made her go lame for two or three weeks. I never heard the mare cough while I had her; she never ran away with me, or attempted such a thing; when she was hunting I have put the reins on her neck and crossed a whole field. I turned her out to grass because she was difficult to be shod, and also, because if any lameness should exist, it would doubtless restore her; she showed no symptoms of lameness when I turned her out. I had her in August, but never rode her. I can't say why I did not use her; I had no particular reason. I sent her into Mr. Avery's, at Exeter, and she was put up for sale; I don't know whether £28 was the highest bidding. I remember a person named Strong, an innkeeper of Frome, being made a bankrupt; he was a customer of mine. I remember that he was to be examined in the Bankruptcy Court. I had a person named Hawkins at that time as an agent of mine.

Mr. Collier—As this is a question of credibility between you and Mr. Butson, I am compelled to ask you a question which it gives me some pain to put. Did you endeavour to get Strong to give you a preference over the other creditors, and did you write to Hawkins in these terms: "He can give bills payable at six, twelve, eighteen, and twenty-four months. But in case he should be asked in court if he had given any

creditor bills, he would of course be compelled to say 'yes.' Therefore, to avoid that, let the bills be dated forward, say from March 25th, then he can at once swear he has given none." The witness not answering, Mr. Collier put the letter to Hawkins into his hand, and he admitted the handwriting to be his, and in explanation said other creditors were pressing Strong, and he wished to serve him and start him again, and the bills were to be given to serve him.

Mr. Collier—Did you not induce Strong to post-date bills—I have them here—and did you not indorse a letter of the bankrupt thus, "Take care of these letters, as you see he offers to serve us by acceptances, which would not be filed in court?"

Witness—He was to post-date the bills.

Mr. Collier-- I shall ask you no more.

Mr. Smith—Who is Hawkins?

Defendant (pointing to a person in court)—There he is—there is the embezzler. I point him out to you; I have discharged him.

John Elmore, servant to Mr. Badcock—Knew the mare, and had the charge of her while in the stables; never knew of anything being the matter with her as regarded her health, or that she had corns. Had ridden her with a snaffle, and she went quietly. Saw Mr. Butson at Exeter. He went to the stable and looked the mare over.

Cross-examined—She was a quiet mare to ride; should call her a particularly quiet mare.

William Norris—I am a veterinary surgeon, and a member of the College; examined the mare after Mr. Badcock bought her on the 31st of August, 1857; considered her perfectly sound; there was a slight approach to a side bone on one of her feet, but it was too slight to notice.

Cross-examined—Last saw the mare about September, 1858, but did not examine her.

Re-examined—Have ridden by her side; she appeared excitable, but I observed no vice in her.

John Smith, shoeing-smith, in the employ of Mr. Norris—Had been in the habit of shoeing the mare; never saw any corns, or heard her cough at all.

Cross-examined—Last shod her hind feet in August, 1858; had not shod her fore feet since April, 1858.

James Wright, a shoeing-smith, who had shod the mare's fore feet on the 25th of August, deposed that he saw no corns there, although he examined the feet.

John Crispin, a colt-breaker, deposed that he broke the mare, and last rode her in October; rode her with hounds and with a plain snaffle bridle; never observed any cough or signs of illness.

Cross-examined—Am not aware that I was hired to ride her because Mr. Badcock was himself afraid.

Samuel Avery, livery-stable keeper, of Exeter—Had the mare for about a month or five weeks before she was sold. His son rode her with a snaffle. She was quiet. Observed no cough.

Cross-examined—The reserved price on her was forty-five guineas; don't know that there was any bidding for her.

Mr. M. Smith, in summing up the defendant's evidence, said, the only real question was that of warranty, and the evidence as to the unsoundness would only become material when the damages had to be assessed. He submitted that the evidence and the correspondence were quite inconsistent with the allegation that defendant had warranted the mare.

Mr. Collier, in replying on the case, commented in severe terms upon the admission which the defendant, *Mr. Badcock*, had been compelled to make as to his conduct with reference to the bankrupt *Strong*. It showed what value he attached to the sacred obligations of an oath. It gave him (*Mr. Collier*) great pain to put the question, because he had the papers in his hand, and knew what the answer must be, but the jury had to decide between the truth of two statements, and he had been compelled to show them what sort of a man *Mr. Badcock* was; that he was a man capable of inducing another to deceive the Court of Bankruptcy on his oath; that he was a man who had no respect for courts of justice, no respect for an oath, and who would suborn another almost to commit perjury, for it was little better than perjury to swear that he had not accepted bills which he had in fact accepted, cheating his conscience by a mere trick about the dates. He submitted that the jury could have no difficulty in determining on which side the truth was, and that their verdict must be in support of the straightforward, reasonable story which had been told them by the plaintiff, whose character was wholly unscathed.

His Lordship, in summing up the evidence, remarked that it happened, by some mysterious law of Providence, that there never was a horse-case in which the plaintiff did not swear one way, and the defendant exactly the other. In this case undoubtedly either the plaintiff or the defendant had perjured himself, and the jury must choose between them. As for the transaction admitted by the defendant and commented on by the learned counsel for the plaintiff, he had no hesitation in saying it was a positive fraud, and amounted to nothing more nor less than subornation of perjury. The learned judge then went through the evidence adduced, reminding the jury that the first question for their consideration was, whether there was a warranty or not, and secondly, if they considered there was, what should be the amount of damages.

The jury, after a deliberation of about twenty minutes, returned a verdict for the plaintiff, damages £20.

MISCELLANEA.

“THE RIGHT MAN IN THE RIGHT PLACE.”

A MUCH higher boon and far more valuable privilege has been conferred upon the middle and lower classes of this country by an Act of Parliament passed last session. For the first time in the history of this country any one may claim as a matter of right, and not of grace, to show that he is worthy to serve the State in an official capacity. Though the people at large, from time immemorial, have taken part in the legislation of the country through their representatives in Parliament, no man could enter the executive departments of the State, or lay claim to any of its offices, even the poorest or the meanest, but through the favour of somebody, who had himself been appointed through the favour of somebody else. Thus the service of the State was damaged and degraded. Its offices were bartered away in

the discharge of personal obligations. The merit or fitness of those nominated was notoriously the very last thing taken into account. But now all this is changed, or in a state of transition; and the corrupting influence of private patronage in the disposal of first appointments is rapidly passing away. The civil service is recruited from a wide circle of selected candidates, and I trust will soon be thrown open to the widest competition. Commissions in the Artillery and Engineers are made the rewards of industry and talent. But above and beyond all, the vast continent and teeming population of India are now brought into closer control with the talent, the energy, the perseverance, the morality, and the Christianity of England. And they who for the time to come are to represent this country in its relations with India are to be selected men, men who are to be openly chosen on the ground of tested competence and proved ability, not nominated through personal favour, as the acknowledgment of private friendship or political obligation. Any one who pleases may claim to be examined for an Indian appointment, under certain obvious restrictions, and if successful he will be as a matter of course appointed. And it is specially worthy of remark how at the late examination for the Indian service fully one third were neither from colleges or schools. The introduction, extension, and establishment of the principle of throwing open admissions in the public service to general and almost unrestricted competition is beyond all others the great charter of educational reform. It will not only raise the standard of mental ability and average acquirements amongst those who may desire to obtain public appointments, but it will stimulate the general education of the country, deepen its earnestness, and improve its tone. High praise they indeed have earned (and the gratitude of the country is due to those young men), who, without either wealth or rank, or official connexion, have forced their way into the reluctant service of the State, and have given ample practical proof that genius and integrity may exist together, and that talent is not incompatible with common sense.—*Dr. Booth.*

OBITUARY.

WE regret to have to announce the death of Mr. Joseph Lucas, M.R.C.V.S., of Lutterworth, which took place on May 7th, in the 71st year of his age.

Mr. Lucas obtained his diploma March 25th, 1808, and entered into practice at Lutterworth, where he enjoyed the respect of a large circle of friends, and their entire confidence as an eminent practitioner.

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Communications and Cases.

ON ERGOT.

MR. G. EVANS, M.R.C.V.S., has directed our attention to a conditional state of the grasses termed ergotized, and forwarded to us a specimen of darnel grass so affected; which he states he has no doubt is often a fruitful source of disease, although he has not been able to trace any to it directly. He adds, "If a large quantity could be collected, and an extract made from it, and given to small animals, its action might be soon ascertained. If circumstances allow me, I will endeavour to do this myself, but I shall be glad to hear that others have done the same, as the more experimenters there are the better."

It is with ergot, as with many other agents used medicinally, that differences of opinion exist respecting its action. The darnel grass itself, however, would seem to possess qualities that are objectionable, or such at least as do not recommend it. Sir W. Burnett, respecting it, says, "*Lolium*, or darnel, is a very common grass, and several species, as the *arvense*, *perenne*, &c., have been recommended to be sown among other grasses on poor cold soils; it affords a bulky crop of hay, and, although much less nutritious than the florins and various others, it is more so than the fox-tail, cock's-foot, dog's-tail, and fescue grasses."

The following table by Sir H. Davy gives the amount of nutritive matter in 1000 parts of the grasses:

Meadow Foxtail (<i>Alopecurus pratensis</i>)	.	.	.	33 parts.
Darnel, or Ray Grass (<i>Lolium perenne</i>)	.	.	.	39 „
Fertile Meadow Grass (<i>Poa pratensis</i>)	.	.	.	78 „
Crested Dog's-tail (<i>Cynosurus cristatus</i>)	.	.	.	35 „
Spiked Fescue (<i>Festuca loliacea</i>)	.	.	.	19 „
Sweet-scented Soft Grass (<i>Holcus odoratus</i>)	.	.	.	82 „
„ Vernal (<i>Anthoxanthum odoratum</i>)	.	.	.	50 „
Fiorin (<i>Agrostis stolonifera</i>)	.	.	.	54 „
„ cut in Winter	.	.	.	76 „

The BEARDED DARNEL is condemned by Virgil in no measured terms. It appears not to be very common in Britain, but in warmer climates it is a noxious corn-weed, which overtops and chokes the wheat; on which account some have thought it to be the tares of Scriptures.

With this opinion Dr. Kitto seems to concur. His observations are—"Tares (*ζιζαρία*). This was probably the *Lolium tremulentum*, or darnel, which was long known for its intoxicating property. *ζιζαρία* (*zizania*) comes, in all probability, from the Arabic *zuwan*; for we find it in the Syriac *zizana*. The *ζιζαρία* corresponded with the *aipa* of Theophrastus, who says in one place that *aiva* is apt to affect the head. He describes it as having a thick, narrow, and smooth leaf, which agrees very well with the *Lolium tremulentum*. It was, from its dangerous qualities and its frequency among wheat, the pest of the farmer, as the sacred text fairly intimates to us. This and the *Festuca quadridentata* form two singular exceptions in the gramineous family, so remarkable for its salutary and nutritious members. The poisonous nature of the *tremulentum* has been ascertained by many experiments, though the deleterious principle is of so volatile a nature that it escapes the cognizance of the chemist; for when analysed, six parts of the meal were found to contain one of gluten, four of starch, and one of saccharine matter, all of which we know are nutritious as well as harmless.

"The darnel, called *zuwan* by the Arabs and Turks, and *zizanon* by the Spaniards, is described by Dr. Russell and Forskal as well known to the people of Aleppo, and as often growing abundantly in their corn-fields. If its seeds remain mixed with the meal, it is found to occasion dizziness and other injurious effects upon those who eat of the bread: the reapers in that neighbourhood, however, do not separate the plant, but after the threshing reject the seeds by means of a van or sieve. We are also informed that, in other parts of Syria, the plant is drawn up by the hand, in time of harvest, along with the wheat, and is then gathered out and bound up in separate bundles."

The *Lolium tremulentum* has just been stated to possess intoxicating properties; and Haller affirms that it not only does so, but if baked into bread, or fermented in ale, its administration is attended with very disagreeable and even fatal effects. It produces headache, vertigo, vomiting, lethargy, and difficulty of speech, the tongue being affected with trembling. Seager adds that, general trembling of the body is one of the most certain signs of poisoning by this plant.

It likewise causes blindness; hence the proverb, "he feeds on darnel," is sometimes applied to an imprudent or short-sighted person.

"By the Chinese laws, for this plant is found both in China and Japan, it is forbidden to be used in fermented liquors. Some of the intoxicating qualities of factitious beer are said to be owing to the admixture of darnel with the malted barley.

"A few years ago, two acres of ground in Battersea Fields were sown with this grain: to what good purpose it could have been applied is unknown, for, although darnel-meal was once recommended as a sedative cataplasm, it has long been disused; and according to Withering, horses, geese, &c., are killed by darnel, and dogs are peculiarly subject to its influence: mixed in small quantities with their food, it is, however, said to fatten chickens and hogs."

The medical journals contain cases of poisoning of the human subject by it. The effects produced were, giddiness, pain and swelling of the limbs, followed by abscesses and gangrene. One of the sufferers lost both his legs.

We have thought it desirable to notice these effects, since it is possible that the grass itself, without being ergotized, may become the cause of disease.

We have now to speak of the ERGOT. It appears to be generally accepted that the ergot is a distinct parasitic plant, called *Ergotætia arborifaciens*, which locates itself in the ovaries of many of the grasses. Rye seems to be more frequently attacked by this fungus than any of the other cereals, hence the *ergot of rye*, or *Secale cornutum*, is most commonly employed medicinally. At one time this peculiar state of the grain was referred to a spontaneous disease, which produced an alteration in its usual constituents, the fecula becoming converted into a kind of mucus—iodine giving no indication of the presence of starch—and the gluten into a principle (*vegetable osmazome?*) very prone to putrefy. At another time it was considered to be the result of punctures made by insects, both opinions being seemingly supported by direct experiments. Again, some writers contend for its being produced by heat and moisture operating as morbid causes on the seeds of certain grasses during their development. Its botanical nature, however, seems to be completely established. Professor Queckett placed some grains of rye, wheat, and barley in a little water, so as to cause them to germinate, and when in this condition he covered them with sporules obtained from the ergot. The greater number of the grains grew and produced seeds, nearly all of which were

found by him to be ergotized. It is evident, therefore, that the spores were taken up by the spongioles of the rootlets, and thus carried into the plant. "The statements of Leveille, Phillipar, Smith, and Queckett," says Pereira, "leave, I think, but little doubt that ergot is a disease of the grain caused by a parasitical fungus. This view is supported by the observations of Wiggers, that the white dust (*sporidia*, Queckett) found on the surface of ergot will produce the disease in any plant (grass?) if sprinkled on the soil at its roots. Phœbus, who has most accurately depicted these sporidia, denies that they are spores, on the ground that they are of variable size, and inclose other bodies. But these objections deserve no attention, for, in the first place, by calling these bodies sporidia, we avoid deciding whether they are sporangia or spori; and, secondly, the sporidia of other plants, of the fungic nature of which botanists entertain no doubt, also inclose smaller bodies." Phœbus is of opinion that the inner substance of the ergot is the altered albumen, and the outer the degenerated seed-coat. The little body at the top he regards as the elevated pericarp with some other external parts of fructification. Queckett considers this to be the remains of the hairy crown of the grain and stigma.

We presume our readers are acquainted with the external characters of the ergot. Various analyses of it have been given, some of which are very complex. Modern analysis makes two essential principles to exist in it, *secalin*, analogous to the volatile alkaloids, and *ergotin*, a nitrogenous acid.

M. Boujeau considers that there are in the *Secale cornutum* a powerful stimulant—extractive, and a narcotic—fixed oil, which is said not to affect the uterus. The active principle is abstracted by hot water, consequently the form of infusion or decoction has been advocated as the best for its exhibition; but as this has a tendency to ferment, it is a good plan to add alcohol or rectified spirit to it; or the form of tincture may be kept ready made, since the diluted alcohol will prove beneficial rather than otherwise.

At the commencement of this article we stated that doubts had been expressed by some persons of the efficacy of ergot. But have all the necessary conditions been inquired into? Has the quality of the agent been carefully ascertained? Its activity is said to reside in the *peridium*, or investing tunic, therefore, should heavy rains fall during its formation, this would be washed away, and the hardened spur-like body become nearly inert. Fine weather causes this to dry upon the spur, and then it is found to be most active. Again,

ergot, if long kept, like all other vegetable substances, undergoes change, consequently it should not be employed after it is twelve months old, or two years at the furthest. Besides this it is very liable to be preyed upon by an acarus. To preserve, it it has been proposed to encoat it with mucilage of gum, then to dry it, and keep it in closely stoppered bottles having a little camphor in them. Spurious ergot has also been met with in the market, made of plaster of Paris, and coloured *secundum artem*.

While some practitioners doubt its influence, others as boldly ascribe to it heroic or specific action, averring that it is an agent of unquestionable power, having an overwhelming influence on the womb, so much so, as to cause it rapidly to expel its contents, and even to cause its inversion, and sometimes its rupture. We are inclined to think that it is a stimulus to this organ, causing in it powerful contractions, the cases that have come under our notice warranting our taking this view of its action, so that when the natural throes have commenced these are aided by it, and parturition becomes perfected.

It may be asked if any other stimulant would not act similarly? Perhaps it might, but not *exactly* the same. Sometimes tonics combined with diffusible stimulants have been successfully administered. If, however, we have an agent that possesses this twofold action, why not resort to it? It has been likewise given to restrain uterine hæmorrhage, and also for throwing off the foetal or placental membranes, when this act has been delayed, and dislodging morbid growths, all of which show its influence on the uterus. And besides all this, it has been stated frequently to cause abortion in animals.

Professor Simonds, the late Mr. Youatt, Mr. W. C. Spooner, Mr. Gowing, and many more of our profession, advocate its use in cattle and other animals when labour is protracted or difficult; this latter being dependent simply on loss of power, not arising from malformation of parts or false presentation, but merely atony of the womb.

When spurred rye has been made into bread and eaten for some time, frightful effects have been produced by it on the human subject. M. Dodard first called the attention of the public to this. He says that persons who have eaten rye-bread made with corrupted grain are liable to be affected with gangrene in their extremities, which is usually attended with little or no fever or pain; but during its progress the use of the limb affected becomes lost, or the limb itself dies and separates from the body. The parts at first become insensible and cold, and at last dry, hard, and withered. Saviard relates

several cases in which the upper and lower extremities of the patients became "as dry as touchwood, and as emaciated as those of Egyptian mummies." Of thirty patients seen by M. Noel in one season, at the Hotel Dieu of Orleans, "some lost only their toes, others their feet at the ankle-joints, others the whole of their legs; and in one case, communicated to the Academy of Medicine, the lower extremities separated from the trunk at the hip-joints, the heads of the thigh-bones disarticulating from the *acetabula*." From this fearful state the sufferer recovered, and it is stated to have suggested that important surgical operation—amputation at the hip-joint. Many more similar cases are recorded. The disease has been designated *dry gangrene* or *gangrenous ergotism*.

"A calamity so serious," says Sir Gilbert Burnett, "could not fail to attract public attention, and stimulate the curiosity of medical men." In the investigations that were instituted it was found that animals of every kind, except man, refused in general to partake of the grain when affected with the spur, and those that were forced to swallow it were observed to die of gangrene, which attacked different parts of their bodies. Such animals as could eject the ergot by vomiting appeared to be little affected by it, but others sooner or later died from it; the symptoms in the first instance being giddiness with dilated pupil, followed by palsy, and "afterwards diarrhoea, suppurating tumours, scattered gangrene throughout the body, and sometimes dropping off of the toes."

Yet when the spurred grain bears only a small proportion to that which is sound, the mixed grain may be partaken of with impunity, a result which has been attributed to the function of the stomach causing the digestion of the poisonous principle when it is enveloped in much nutrient matter. This, perhaps, is also to be assigned as the reason why, according to Block, twenty sheep ate together nine pounds of spurred rye daily for four weeks without any ill effects; and in another instance twenty sheep consumed thirteen pounds and a half daily, for two months, without injury. Thirty cows took together twenty-seven pounds daily, for three months, with impunity; and two fat cows ate, in addition, nine pounds daily, with no other obvious effect than that their milk gave a bad caseous cream, which of course did not yield good butter. Similar results follow in the herbivora with other vegetable poisons, as the yew, laurel, savin, &c.; large quantities being often required to destroy life.

It may possibly be said, that after all we have stated nothing definite, nothing that is new, nor is it decided whether the ergot is an agent to be depended upon or not. If

we have not done so, we have, nevertheless, expressed our opinion; and should it not agree with that of others, it is only bearing out the adage that "opinions differ;" while we have no desire to be dogmatical, the *onus probandi* not resting with us.

We will only add that Dr. Christison has found the INDIAN HEMP (*Cannabis sativa*) to be both more energetic and more certain in its action than the ergot of rye as an agent for increasing the force of the uterine contractions. The form of tincture, or a watery solution of the extract, is preferred by him.

Our Indian friends could aid us here in obtaining this agent in its purity, and, perhaps, tell us somewhat more of its effects on the lower animals.

ON ENTOZOA.

By G. BODDINGTON, M.R.C.V.S., Canton, Cardiff.

SINCE the commencement of my professional duties here, up to the present time, I have been called upon almost without intermission to prescribe for horses suffering from "worms" and on examination I have invariably found the report to be true; the *Ascaris lumbricoides* existing in such numbers, in almost all cases, as never, during the whole of my experience, do I remember to have seen. Indeed, hitherto in those cases that have come under my notice these parasites have not been of that nature, nor their consequences of that character, as to lead me to think seriously of their presence, or that any injury would be likely to accrue from them; and I have frequently observed that they have, like the much talked of and invulnerable "*bot*," which has made its appearance in summer, been naturally voided, and then nothing more heard of them.

Such, however, has been the urgency of the symptoms presented in many of the cases upon which I have been consulted, that I consider them fully entitled to due notice, and also requiring prompt attention. I find that all the symptoms it is possible for the horse to exhibit of Invermiation are usually present, and in order to justify this opinion I shall record one or two of the numerous cases that have occurred, all of which I am happy to say have been most successfully treated by me.

CASE NO. 1 was a blood, bay mare, five years old, the property of Capt. E. B—ke, which I was called in to see on

January 14th, 1859. This animal had been in training for some time up to this day, and at various periods medicines had been procured and given her, as she had at intervals shown symptoms of all not being well. She is now almost entirely off her feed; but her appetite is very capricious, and upon the whole she is not doing satisfactorily. Her attendant at last having an idea she had "worms," I was requested to see her. I found her a sad spectacle; poor in the extreme, and consequently weak and emaciated; dull in spirits, with a most anxious expression of the eyes, and, as her attendant justly observed, the "bloom of her skin had faded"—it was gone, and the beautiful soft mellow state of the common integument, so well known to all familiar with what is termed *condition*, was lost; the skin being hard, dry, and harsh to the touch, and tightly adherent to the ribs; she has a most voracious appetite, but there is a continual wasting of body, with much uneasiness in the stable, and restlessness of position, and a desire to press the anus against the wall, where she would remain some time; she does not lie down regularly; manifests great thirst; pulse 45 to 50, wiry and weak; the mucous membranes pale and yellow; the fæces soft and covered with mucus.

CASE 2.—On March 9th, 1859, my attention was directed to a black gelding, six years old, the property of Mr. M——, car-proprietor, of Cardiff, the owner giving me the usual assurance in such cases, that his horse had "worms." On visiting the patient, I found him, *although at work*, in a most pitiable state, looking a complete skeleton. My first inquiry was—Had any medicine been administered? I was told he had been attended several weeks, and "*lots*" of medicine given, but without any effect as regards the removal of the offending parasites. The animal was now in an emaciated, low condition, which rendered it necessary that something should be done for him, and that, too, speedily. On a more careful examination, I found the coat to be staring and thin; the skin harsh and dry to the touch, called "hidebound;" the respiration quickened, and a most anxious and depressed expression of the eyes; the pulse 70, and characteristic of pain; the appetite voracious, with wasting away of the body, and intermittent colic, which was shown by frequent kicking the abdomen with the hind feet, but without those other violent symptoms so indicative of a case of well-defined or true colic.

Cases such as these already cited I could easily multiply; all being of the same description, and exhibiting the like

well-marked symptoms, all having occurred in the town and neighbourhood of Cardiff.

Treatment.—Being satisfied as to the undoubted existence of the *Ascaris lumbricoides*, and that this parasite, existing in large numbers, was the exciting cause of the disturbance, I at once endeavoured to effect their speedy and complete removal. For this purpose, in every case, I prescribed as follows :

℞ Aloës Barb. pulv., ʒj ;
Ant. Potass. Tart., ʒiiss ;
Ferri Sulph., ʒij ;
Potass. Nit., ʒss.
Misce, fiat bol. j.

One of these balls was ordered to be given every night and morning until the bowels became relaxed. The *diet* consisted of bran, linseed, and oats, all *well steamed*, and given warm. The result of this treatment has invariably been that, after the fourth or fifth dose has been given, a complete expulsion of the worms has taken place ; in fact, I have never yet found any other means required, or this at all necessary to be repeated.

I may mention that the large number of nearly six hundred of these “disturbers of the horse’s peace” were committed to “safe keeping” in Case 1, and from four to five hundred of them in Case 2 ; and many of them measured in length from eighteen inches to over two feet. In all the cases I have seen here the numbers of the worms have been enormous, though not always so large in size as in the two cases quoted.

Having relieved the poor beast of these annoyances, I next turn my attention to the general state of the animal, and when great prostration and debility present themselves, I prescribe :

℞ Zingib. Rad. pulv., ʒij ;
Gent. Rad. pulv., ʒij ;
Liq. Am. Acet., ʒiv. Misce, fiat haust.

To be given in warm gruel every night and morning for two or three days, followed up with any ordinary mineral tonic. I prefer Ferri Sulph., given in half-drachm doses, twice a day, in the food, which latter should be liberal. This usually completes the cure.

Remarks.—It appears somewhat remarkable that these parasites should be found so generally among the horses, both of light and heavy kinds, in this neighbourhood ; and I think the cause worth an inquiry into. Can it be the nature

of the provender; or is it the water? I am inclined to believe the former, for I have invariably found the hay and clover to be exceedingly high-dried and very dusty, having the appearance of being too much exposed to wind and dust during harvest. The water is off the limestone formation, and is generally conveyed in lead pipes.

I would just allude more particularly, in closing my remarks, to the use of the sulphate of iron as a vermifuge. I do not know if it has been in general employment among my brother practitioners, not having seen any report of its use, and wishing also that "each should benefit by the experience of each," I would strongly advise its addition to their formulæ, for I can vouch for its efficacy after an extensive trial of it.

THE PRESENT STATE OF THE VETERINARY PROFESSION, AND THE CAUSES THAT RE- TARD ITS ADVANCEMENT.

By R. GIBTON, A.B., M.R.C.V.S., Melbourne.

GENTLEMEN,—The excellent and appropriate address delivered by Professor Spooner at the commencement of the present session, and published in the *Veterinarian* for November, contains much sound and wholesome advice, and which, if acted on, would, I doubt not, soon tend to raise the profession at large, and the members thereof individually, to that high position not, it must be acknowledged, yet fully attained.

There appear to be several causes in operation to retard the progress of our art. I will endeavour to give a few of those that occur to me, as well as the remedies that suggest themselves to produce an opposite state of things. It is, I think, freely granted that in England the highest places are open to the humblest individuals, provided they have the ability and skill to attain them. This may be held as a general rule, though exceptions are numerous; aristocratic influence often being brought to bear against merit; also, that there exists much unrequited merit none can doubt, which is easily accounted for by the fact that the supply is greater than the demand. My object in this prologue is to point out the fact, which I am sure will be agreed to by all, that few have ever attained these positions, or arrived at

much celebrity, whose early education has been neglected, or confined merely to the pursuit he has adopted. The man unable in the present day to travel beyond his daily avocations, is but poorly adapted to advance either himself or others. And are there not in our profession many so situated—quite at home in the stable, and anything but so elsewhere? Now, I think, such a state of things, to a great extent, is referable to the want of a compulsory examination for those entering the profession. I would shut our doors to none; open they should be to any of every class and degree, but under the restriction that all should submit to the test of having acquired a liberal education. This would have the effect of equalising all on their entrance into the profession. The man of superior position in society would then think it no degradation to associate with him of humbler birth, neither would the latter deem himself honoured by the former. A liberal education (when not abused) entitles its possessor to an honorable “*locus standi*” in the social scale. Who, among the aristocratic literati of the present day, would not prefer the society of an educated inferior to that of an ignorant equal? All honour to the ambition of him who from the humble ranks enters a liberal profession, but let him understand that he is ill-suited to ornament it if he regard nought else. Some are under the impression that it is the profession that raises the man, whereas it is the man that raises or degrades his art. Unfortunate is it for the liberally educated veterinary surgeon, when thrown into a community where alone the ignorant and unscientific have held sway, and where the ornaments—and there are many—of our art have never been heard of, much less known. He has to contend against much before he finds himself in that grade of society he is entitled to. The question is, “Is our profession a liberal one or not?” If so, it surely requires its members to be liberally educated, so as to enable them to take their stand alongside of the other professions. We would suggest that all pupils, on their entrance into the College, be subjected to a similar—or, if it be thought desirable, at first to a less severe—examination to that undergone by pupils of the medical and surgical professions. Say, 1st. A written theme, to show they possess a correct knowledge of English grammar. 2dly. To translate a portion of Virgil, Horace, Homer, the Greek Testament, &c, for who can doubt the advantages of a classical knowledge to the medical student? 3dly. A few books of Euclid, and of algebra a portion. 4thly. I think an acquaintance with French by all means should be required, for in the present day a man deficient in this often feels

his want painfully. This curriculum may need modification at the hands of those better capable of judging than I am. But it is the adoption of some such plan that I would advocate.

“ Knowledge is as food, and needs no less
Her temp’rance, over appetite to know
In measure what the mind may well contain,
Oppresses else with surfeit, and soon turns
Wisdom to folly.”

But while I urge such a measure as this, I am equally anxious to avoid any injustice being done to those whose intention it might be to become students before they could sufficiently acquire the attainments above suggested. On the contrary, a sudden change I think would be injudicious, and would, therefore, recommend it not to become a bye-law for some four or five years, and even then it might be brought round gradually, requiring a less amount of knowledge the first few years before the whole course be expected. Against all this there will be many, I know, ready to exclaim, “Of what use can these acquirements be in the sick stable?” I say, “*cæteris paribus*,” much—both inside and outside. I often think there is an impression with some that an educated and a practical veterinary surgeon cannot be one and the same; but who can doubt the combination in many men whom you and I could name? The slang of the stable that some veterinary surgeons adopt, to show their acquaintance therewith, in a measure accounts for this. To the educated these terms are revolting. Coarse expressions are as ill-suited to the refined mind as coarse food to the delicate appetite.

Now, if any should think that I am detracting one whit from the necessity of practical qualifications, they are mistaken. In no profession do I conceive their loss is more severely felt than in ours. It is not a day or two, or a year or two, that makes us acquainted with the manners and customs of horses, much less their diseases. But I will not go so far as some do, who say the only men who make veterinary surgeons are those accustomed to horses from their cradle. It, however, behoves those in authority to see that opportunities are afforded for all to acquire a due amount of practical experience. The connexion of the shoeing-forge with the practice of the veterinary surgeon, has done anything but to raise his position; still, how it is to be universally done away with I am at a loss to say, being in itself often lucrative, and the means of husbanding a practice, and often sufficient to retain it. For my own part, I could wish to

see them dissevered. That it is often desirable in some places for a veterinary surgeon to unite some other business with his own, there can be no doubt. To such a one I would say—re-echoing the sentiments I think I have heard Professor Morton express—“Avoid horse-dealing, and rather, if you are compelled to look to other resources, have a drug business attached.”

Finally, let us all recollect that our respectability is not so universally established that we can afford to lose any of it, and it therefore behoves us to bear in mind an advice contained in the lecture alluded to at the commencement of my letter, which happy mean is “neither to be above nor below our calling,” and thus avoid the Scylla on the one hand as well as the Charybdis on the other.

I am, Gentlemen,
Very truly yours.

To the Editors of the ‘Veterinarian.’

POISONING OF A COLT BY YEW.

By C. STEPHENSON, M.R.C.V.S., Newcastle-on-Tyne.

THE colt to which I am about to refer was the property of Joseph Laycock, Esq., of Low Gosforth, Northumberland, the present Mayor of Newcastle.

I was consulted on the 22d of March last, as to the probable cause of the death of a two-year old blood colt, which had been found dead in the park on the morning of the 10th. He was apparently quite well the night before, and there was no appearance of any struggling having taken place previous to death.

The animal had been skinned and buried, and no more was thought of him until a few days after, when Mr. Laycock observed that the ground near a yew tree in his shrubbery retained the prints of the colt's feet, and that the tree appeared to have been nibbled at. Mr. Laycock having a few years ago had a horse poisoned by eating yew leaves, he immediately suspected this to be the cause of the death of the colt; and on his consulting me, I at once gave it as my opinion that if the colt had eaten of the yew it was very likely to be so. It was therefore determined to exhume the

carcass and make a minute post-mortem examination, which was accordingly done on the 25th, before several gentlemen.

Post-mortem examination.—Although the colt had now been buried sixteen days, very little decomposition of the body had taken place. Having removed the extremities, the head, fauces, and spine were minutely examined, and found to be in a normal state. The stomach, which was moderately filled with food, was carefully taken out and opened; and, principally in its *cuticular* portion, a quantity of masticated yew leaves and small branches of the tree were met with. There were also several detached bots in the stomach, but there was not the slightest discoloration of the lining membrane of this organ or the intestines, and the rest of the abdominal viscera were healthy, as were also the lungs and heart; but upon opening the pericardium, it was found about half full of a thick sanguineous fluid.

I have been induced thus to trespass upon your space, so that the owners of horses may be put upon their guard respecting the poisonous properties of the yew, for I am surprised how few gentlemen know that it is poisonous. To our own profession I think it is a most important subject, and one which we should be well acquainted with.

I am sorry that so much time elapsed between the death of the animal and the post-mortem examination, as otherwise the morbid changes which had taken place might have been easier traced to their true cause.

THE USE OF THE TREPHINE IN CASES OF DISEASE OF THE SINUSES OF THE HEAD.

By A. J. OWLES, V.S., H. M. Carabineers, Muttra, Bengal
Presidency.

THE paper in a late number of the *Veterinarian*, 'On Diseases of the Nasal Cavities,' by Professor Delwart, with your editorial remarks thereon, corroborative of the beneficial result to be expected from the use of the trephine in certain cases of discharge from the nostrils, induces me to send you a short account of a case which has lately been under my care. I could add others, if my object were merely to write a long letter, but I assure you my desire is to testify to the good of trephining in diseases of the sinuses of the head, as far as my own experience enables me to do so.

The cases in which a cure may be expected from the operation are just those which ought not to be confounded with glanders. Although all chronic discharges from the nostrils are, and properly so, looked upon with suspicion, this does not justify an indiscriminate slaughter of animals so affected. Many cases are, at a certain stage, perfectly local in their nature, and distinguishable from glanders, consisting in the formation and lodgment of pus in one or more of the cavities of the head, which, from their construction, retain some portion of the matter secreted within them, and this eventually leads to disease and change of structure. Free exit given to the matter, and gentle stimulants resorted to, so as to restore the healthy action of the part, will suggest themselves to all persons as the most likely means to effect a cure, the same as is frequently seen to occur when pus lodges in other parts of the body.

The cases in which I have found trephining to be useful have presented the following symptoms: discharge from one nostril (I have known only one exception to this); after a short time the submaxillary glands on the same side become enlarged; the Schneiderian membrane is not ulcerated, but looks unhealthy; the matter discharged is offensive, not constantly flowing, nor is it so sticky as it is in gleet proper; frequently a slight rattling noise may be heard in the head during the act of breathing; the appetite and condition are generally unimpaired; in very extreme cases a dull sound is heard if the bone bounding the affected sinus be tapped, thus indicating the proper one to be opened.

As cases presenting these symptoms are not uncommon, and the chances for such being cured are rather in their favour, I think the very little risk there is attending the treatment of them ought not to deter any one who has daily opportunities of seeing his patients from undertaking the treatment of the same. I cannot agree with those who think the majority of English veterinary surgeons condemn horses as glandered when they are only affected with catarrhal gleet.

The case I have now under treatment is not a peculiar one, as I can recollect several others similarly affected. The horse is eight years old, has been in camp for twelve months past, and did not come under my notice till the 1st of February, 1859, I having been with the head-quarters of the regiment in Oude. I was told the discharge had existed for more than two months, and that it was supposed to be the effect of a cold. I found a slight discharge only from the off nostril, but from the near there was a considerable escape of

whitish pus, not very peculiar in consistence, and only slightly offensive to the smell; the submaxillary glands of the near side were enlarged, but not adhering to the jaw, as is frequently the case in the more serious discharges from the nostrils; the Schneiderian membrane looked pale, and inclined to a leaden hue; the condition was good. I ordered a nutritious diet, and the head to be steamed, by putting the nose in a bag containing grass and hot water. Cantharides in combination with vegetable tonics were given daily.

After ten days I found but little or no change to have taken place. Sometimes the discharge was profuse, and contained lumps of hardened, cheese-like, and offensive matter; at other times it became much less and thinner, presenting a blue appearance and having adhesive properties; there was also a rattling noise to be heard in the head during respiration. I decided to open both the frontal sinuses, and afterwards inject some tepid water. A little mucus flowed from the off side with the return of the water, but from the near pus escaped, both from the opening made and the nostril; the smell of which was very offensive. After injecting a sufficient quantity of water, a weak solution of alum was thrown in, and this was repeated twice daily. The effect on the off side was evident and satisfactory; but on the near, the discharge continued, and did not become less offensive. On the 20th of February I opened the maxillary sinus on the near side, and injected into it. The discharge which followed proved this cavity to be the principal seat of the disease. It was profuse, and exceedingly offensive. The injections were continued into both the frontal and maxillary sinuses. The off side at that time was nearly free from discharge, and therefore was injected only once daily; and by the end of February it had entirely ceased, while the matter from the near was much altered in character, being more healthy, and the disagreeable smell almost gone. I now substituted a solution of sulphate of copper for that of alum, and this treatment has been continued up to the present time. The discharge has now ceased, and I have no doubt the horse will soon return to duty.

Non-professional readers of the *Veterinarian* may fancy, when perusing the paper by Professor Delwart, that their horses have been destroyed unnecessarily, if it should so happen that any of them have been destroyed for glanders.

FILARIA OCULI.

By the Same.

Perhaps the little worm, *Filaria oculi*, I have inclosed in this will keep, as it has been in spirits for twelve months. I removed it from the eye of a horse, by puncturing the cornea in the way generally described. These little worms are the cause of much trouble here. It is not pleasant to puncture the eye, although the inflammation subsides quickly.

[We thank Mr. Owles for the specimen of *Filaria oculi*.]

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. WATSON, M.R.C.V.S., Rugby.

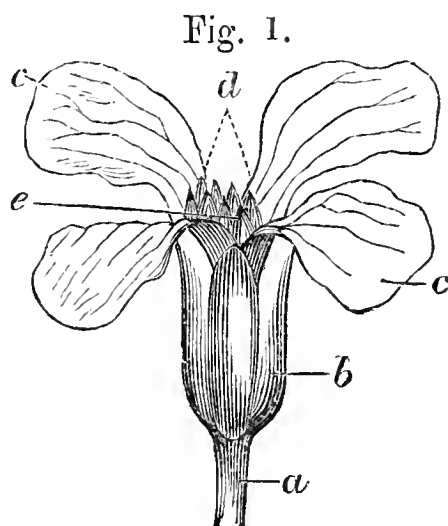
(Continued from page 260.)

BEFORE describing the subdivisions of the Natural system, it will, perhaps, make the subject more clearly understood if a brief outline of the different parts entering into the formation of a flower be given.

A FLOWER, when perfect, consists of the following parts, which may be readily observed in the blossom of the common wall-flower. (See fig. 1.) Supported on its *peduncle* (*a*) we find externally the *calyx* (*b*), next the corolla (*c c*), within that the stamens (*d*), and in the centre the pistil (*e*).

Each of these parts is not always present. Sometimes the calyx is absent, in others the corolla, and in some plants both. The only really essential parts belonging to a flower are its reproductive organs, viz., the stamens and pistil, with their appendages; constituting, the former the male, the latter the female, organs of the plant.

Most plants have the male and female organs together in the same flower, and are then called hermaphrodite; but in some instances, although the same plant has both male and

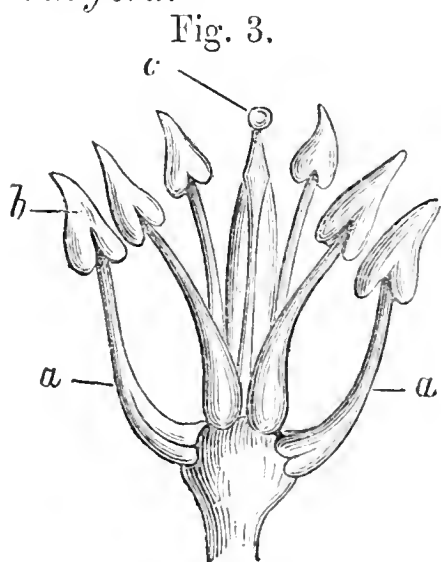


female organs, they are situated on separate flowers, while in others they exist only on different plants.

The *calyx*, or flower-cup (fig. 2, *a*), is the external envelope of the flower, surrounding the corolla. It consists of two or more divisions, called sepals, which are either distinct, when it is called polysepalous, or which are united at their margins, and then called monosepalous. It is generally green in colour, but in some flowers, as the fuschia, &c., it is highly coloured. It varies much in shape, and like all the other appendages of the flower is a modification of the leaf.

Its use is to protect the bud before it expands.

The *corolla* (fig. 2, *b b*) is situated within the calyx, and consists of either a single piece or petal, when it is called monopetalous, or is divided into several, when it is called polypetalous. It has generally a more delicate texture than the calyx, and gives the brilliant colours and fragrance for which most flowers are so much admired. In some plants it is absent, in others it constitutes the only envelope. It is generally divided into two parts, the lower, called the claw, and the upper expanded portion, the limb, the former corresponding to the stalk, the latter to the laminae of the leaf. It varies much in shape and outline, sometimes giving distinct characters to orders, as in the lip-shaped corolla of the Natural order *Labiatae*, the cruciform in the Natural order *Crucifera*.



The *stamen* (fig. 3, *a a*) is situated within the corolla, and constitutes the male organ of the plant. It usually consists of two parts, viz., *filament* (fig. 3, *a a*) and *anther* (fig. 3, *b b*).

The filaments are either distinct or united by their margins. If into one tube, they are called monadelphous; if in two parts, diadelphous; and if in several, polyadelphous. The filament is not essential to the stamen. When absent it

is said to be sessile. Attached to the summit of the filament we have the *anther*, which is formed in most instances of two

small membranous sacs, attached to each other, or united by an intermediate body. They vary much in form. When they grow together by their margins they are called syngenesious. Within the anther we have a yellow-looking powder, called *pollen*, which, when examined by the microscope, is found to consist of grains of definite size and shape, and which are uniform in the same plant. Their colour is generally yellow, but in some plants this is blue, red, &c. Pollen is the organic matter by which impregnation is produced in the vegetable kingdom.

It is very important to bear in mind the position of the stamens, as upon this the subdivisions of exogenous plants in part depend. When the stamens are attached *below* the ovary they are said to be *hypogynous*; if to the sides of the calyx, *perigynous*; if to the corolla, *epipetalous*; if on the *top* of the ovary, *epigynous*.

The *pistil* (fig. 3, c) occupies the centre of the flower, being surrounded by the stamens and floral envelopes. It is the female organ of flowering plants. It consists of three parts (fig. 4), viz., *style* (a), *stigma* (b), and *ovary* (c). The style is the part which connects the ovary and stigma. It is not always present. When absent the stigma is sessile.

The *ovary* is situated at the base, and contains the ovules or rudimentary seeds.

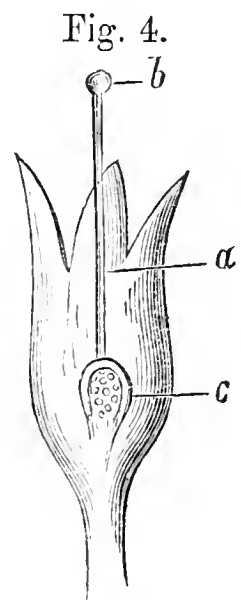
The *stigma* is the enlarged upper extremity of the pistil. Its use is to receive the pollen grains from the anther, which are then conveyed down the style to the ovary, to impregnate the ovules contained in it.

The above description of parts entering into the formation of a flower, although very short and imperfect, will, I think, be sufficient to make the following subdivisions of the Natural system understood. Of the three primary divisions, viz., exogens, endogens, and acrogens, the former only will be described as having subclasses, as, according to De Candolle, endogens are all included in a single group of orders. Acrogens are destitute of flowers.

Dr. Lindley, adopting the arrangement of De Candolle, divides exogens into the following subdivisions.

SUBCLASS 1. *Thalamifloræ*.—Flowers furnished with both a calyx and corolla, the latter consisting of distinct petals. Stamens always hypogynous, or united to the sides of the ovary.

SUBCLASS 2. *Calycifloræ*.—Flowers furnished with both a



calyx and corolla, the latter usually consisting of distinct petals. Stamens always perigynous.

SUBCLASS 3. *Corollifloræ*.—Flowers furnished with both calyx and corolla, the latter consisting of united petals.

SUBCLASS 4. *Monochlamydeæ*.—Flowers having no corolla, and sometimes not even a calyx.

These divisions are subdivided by different authors in various ways, which need not be specified, as under these the Natural orders or families are considered.

(*To be continued.*)

CASE OF MARASMUS IN A MARE.

By E. F. THAYER, V.S.

THE following case, although not so full in its details as I could wish, from the fact that the patient was sent to pasture and kept there for several weeks unnoticed, nevertheless is one which I have thought worthy of being placed on record.

A black mare, aged, was observed to refuse her food. A dose of cathartic medicine was administered to her by the stable-keeper, which produced the desired action, but no benefit resulting from it my attention was called to her on May 25th, 1857. The present state of the animal is as follows: pulse and respiration normal; visible mucous membranes of the natural colour; coat glossy. The molar teeth having rather sharp edges, to these the rasp was applied; and alterative medicine was ordered to be given.

June 3d.—As the mare is not perceptibly better, and it being the proper season for turning out to grass, the owner decided upon giving this a trial. My advice was to watch her, and if she did not improve to have her at once attended to. I neither saw nor heard any more about the animal until August 20th, when the owner drove into my yard leading in the mare, or the skeleton of her I might almost be permitted to say, for she was certainly the poorest animal I ever saw. He said he wished to leave her with me, and thought she would not recover. I might, he added, try any experiment on her I pleased, but if she appeared to suffer to have her destroyed. After the animal had been in the stable about three hours an examination was made; the pulse was 40, soft, and very weak, the respiration tranquil, the visible mucous membranes pale. She appeared lively, the eyes were

bright, but her coat had lost its glossiness, and the skin was adherent to the ribs; in fact, the case seemed to be one of "a wasting away of the flesh, without fever or any apparent disease." I offered her some oats, of which she ate perhaps a pint, with some appetite, but she would eat no more. Some grass was now offered her, then hay, but she would not partake of either.

August 21st.—I led her into a field, to a nice piece of grass; she ate of it for fifteen minutes with a good appetite, after which nothing would tempt her to eat any more. Thrice in the day she would eat about the same quantity.

Reflecting that I was in doubt as to whether the disease was caused by indigestion, arising from the want of the natural secretions to be mixed with the food, both going to and while in the stomach, or that some impediment existed, perhaps a tumour, occupying a portion of the stomach, and preventing a free passage of the ingesta into the intestines, and acting upon the first supposition, vegetable tonics with alteratives were given for four days without apparent benefit. I then gave scruple doses of calomel, morning and evening, and the third day after a decided improvement was manifest. Double the quantity of food was eaten by her, and she was more lively, prancing about like a colt, although this was a ludicrous sight to behold. This change continued for two weeks, when her appetite again forsook her. Considering the case to be hopeless, she was destroyed.

Autopsy.—After removing the walls of the thorax and abdomen, the general appearance of the viscera was pale and smaller than natural. On taking out the right lung, it was found to be adherent at its anterior part to the pleura costalis, probably the effect of a former attack of pleurisy. The heart and liver appeared healthy; the stomach was also healthy, excepting that it was smaller than usual, but the small intestine, nineteen inches from the pyloric orifice, was abruptly contracted, the contraction continuing for five feet, when it as abruptly resumed its natural size. On laying open the contracted portion, the walls were thickened to nearly one fourth of an inch, leaving the canal so small as hardly to admit the little finger; the kidneys appeared healthy; the brain I did not examine, as there was no appearance during life of any abnormal action arising from interference with the functions of this organ.

Facts and Observations.

DRINKING FOUNTAINS.

It is gratifying to observe that while the above are being erected in numbers both in the metropolis and provincial towns, for the use of man, drinking troughs for the lower animals have not been forgotten.

The British Workman has always been a warm advocate for their general adoption, and in reference to one lately erected by the *Society for the Prevention of Cruelty to Animals*, it says—“Tens of thousands of horses, cattle, and dogs, have been refreshed at the above trough on the side of the road leading to the metropolis . . . There is a bitter cry from the dumb creation throughout the land for water.”

Apropos, the above society has lately issued the following on a card, for gratuitous distribution among men frequenting cattle-markets, slaughter-houses, &c. We need hardly add that these manifestations have our cordial approval, as they give proof of the better feelings of man being awakened for those creatures placed lower in the scale of existence than himself.

FROM THE ROYAL SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS, No. 12, PALL MALL.

CRUELTY in any form, or upon whatever creature inflicted, is contrary to the will of the Creator, whose beneficent care is not confined to man, but extended to every living creature. It is therefore abhorred by all rightly constituted minds.

It should never be forgotten that the lower animals, though mute, have feelings and sympathies similar to those which we ourselves possess.

To torture animals by causing them unnecessary pain, or to refuse them proper food and protection when placed under our care, is evidence of a depraved mind.

Justice is as much due from man to the creatures under him, as it is from man to man.

To exact an immoderate amount of labour from domesticated animals; to severely punish them while performing it; or wantonly to terrify any creatures, especially the more timid ones, is alike an act of cruelty and injustice, for which he who perpetrates it is accountable both to God and man.

To destroy life is to take away that which God has given, and which man cannot restore.

The very construction of man, however, implies the necessity for a

mixed diet of flesh and vegetables; therefore for the purposes of food the act of slaughtering animals is justifiable, but it is incumbent on all who may be engaged in this duty, that it should be done with skill and humanity, so as to avoid any protracted suffering to the creature whose life is about to be taken.

The excessive punishment too often inflicted on animals in slaughter-houses, fairs, and markets, seems to set aside the fact that our dominion over them should be exercised in accordance with justice and humanity. If the poor creatures could express their feelings, they might rightly pronounce us the TYRANTS rather than the "LORDS of the creation."

"Remember He who made thee, made the brute;
Who gave thee speech and reason, formed him mute;
He can't complain, but God's omniscient eye
Beholds thy cruelty, He hears his cry."

By order of the Committee,
GEORGE MIDDLETON, *Secretary*.

LONGEVITY IN THE HORSE.

THE journals of the Loire record a rare case of longevity in a horse: Count de Foudras, of the chateau of Origny, near Roanne, purchased in 1821 a 7-year old horse, and the animal has just died, aged 45 years. Up to the age of 40, it is added, the animal worked regularly, and remained "in good spirits" during the last five years of its life.

IODIZED GLYCERINE IN VARIOUS DISEASES OF THE SKIN.

By Dr. RICHTER, of Vienna.

THIS compound is prepared by dissolving one part of iodide of potassium in two parts of glycerine, and pouring this liquid on one part of iodine, which it dissolves completely. This solution has the great advantage over alcoholic solutions of not drying; in consequence the surfaces remain supple, and the action and absorption of the iodine continues for a long time. To use the solution it must be spread upon the diseased parts and covered with gutta-percha paper to prevent the evaporation of the iodine, and to augment the perspiration of the parts which have been touched. The whole is left untouched for twenty-four hours and the degree of the reaction regulates the further applications, as, for example, bathing with cold water and its fresh application. The iodised solution occasions some pain, which varies in intensity and

duration, according to the state of the diseased part and the sensitiveness of the individual. There has, however, never been any general inconvenience. On removing the covering the healthy skin will be found to have become brown, and the diseased portions paler coloured than before. On ulcerated surfaces, no trace of iodine will be detected two hours after its application. Sometimes the action has been sufficiently powerful to produce *phlyctenæ*.

The results of Dr. Richter's experiments are, that this solution acts as a caustic; that it has a really heroic action in cases of lupus; that its efficacy is remarkable in non-vascular *gôitre* and scrofulous ulcers, doubtful in eczema, and *nil* in psoriasis.

GLYCERINE A PRESERVATIVE OF MORBID PARTS.

It is well known that alcoholic and most other solutions resorted to for the preservation of morbid specimens both destroy their colour and render them hard. Now, since glycerine has been found to preserve the colour of natural objects, and also their flexibility, it would seem to be an admirable fluid for keeping morbid parts in, much of their worth being referable to the change of colour, &c., produced by disease.

MEDICINAL MILK.

M. LABOURDETTE has instituted a series of experiments, by which he proves that, with the exercise of due precautions, cows might be made to take various substances, as lead, iodine, &c., with which their milk would become charged, and the mammary secretion may be then given to children, or persons of irritable stomachs.

THE ACID NITRATE OF SILVER.

M. CROCQ lately read a paper before the Medical Society of Brussels, wherein he sets forth the advantages of a caustic solution hitherto not much employed — namely, the acid nitrate of silver. The author states that it should be used when the surface acted upon is to be more or less deeply modified, without an intention of destroying

much thickness of tissue—in fact, in those cases where the solid nitrate of silver or the acid nitrate of mercury is generally used. The acid nitrate of silver is, however, superior to the simple nitrate, as it penetrates much better into interstices, and as its action may at will be made superficial or deep (the difference depending on the longer or shorter contact). It is also preferable to the acid nitrate of mercury, because it produces no toxic effects, and never gives rise to alarming symptoms, however extensive the surface may be with which it is brought in contact. Nor can it excite salivation. Its action can, moreover, be at once stopped when the vagina, the mouth, or the eye is operated upon, as an injection of a solution of common salt will immediately render it inert. Chancres, simple or sloughing ulcers, hospital gangrene, lupus, epithelial cancer, &c., can be treated with this caustic solution. It may be prepared either from the simple nitrate or from metallic silver. To obtain it from the lunar salt, it will be sufficient to add eight times by weight of nitric acid, at 33° , to the nitrate of silver, and expose to heat in a stoppered bottle. With metallic silver, ten times the weight of nitric acid, at 35° , should be poured on the metal, and a gentle heat be used.—*The Lancet*.

PERMANENCE OF POISONS.

THE chemical and juridical relations of nicotine acquired a painful interest some years ago in the well-known Bocarmé case, in which the Count and Countess Bocarmé were convicted of having forcibly administered this poison to M. Fougny, the countess's brother, while he was dining with them at the Chateau of Bitremont. M. Melsens has recently proved by a series of experiments, that it can be chemically detected in the human body long after death. The tongues of two dogs that had been subjected to some of the experiments, conducted on the occasion of that trial, had been thrown into a trough in one of the chambers of the Veterinary School at Brussels. In 1853, this chamber was flooded, and the water penetrated into the vessel, which had been imperfectly closed. In 1858, M. Melsens analysed the contents of the vessel, and discovered traces of nicotine in it. In like manner he has been enabled to detect nicotine in other organs which had been removed from animals poisoned by this alkaloid, and which had been left purposely to putrefy. The process of putrefaction is insufficient to decompose nicotine, as it is to destroy strychnine. Both alike defy for long the destructive influence of the tomb, and remain to testify against crime, and bear witness against the murderer.—*Ibid*.

Extracts from British and Foreign Journals.

ON RECENT AND FOSSIL MAMMALIA.

PROFESSOR OWEN, F.R.S., has been giving a series of lectures on the above subject at the Royal Institution of Great Britain. Admirably has he brought his master-mind to bear on the science of palæontology, and at the conclusion of the twelfth lecture, as reported in the *Medical Times and Gazette*, there appears a summary of the succession in time and geographical distribution of recent and fossil mammalia, which closes with the following apposite observations:

“Turning from a retrospect into past time to the prospect of time to come—and I have received more than one inquiry into the amount of prophetic insight imparted by palæontology—I may crave indulgence for a few words of more sound, perhaps, than significance. But the reflective mind cannot evade or resist the tendency to speculate on the future course and ultimate fate of vital phenomena on this planet. There seems to have been a time when life was not; there may, therefore, be a period when it will cease to be.

“Our most soaring speculations still show a kinship to our nature: we see the element of finality in so much that we have cognisance of, that it must needs mingle with our thoughts, and bias our conclusions on many things.

“The end of the world has been presented to man’s mind under divers aspects: as a general conflagration; as the same, preceded by a millennial exaltation of the world to a Paradisaical state—the abode of a higher and blessed race of intelligences.

“If the guide-post of palæontology may seem to point to a course ascending to the condition of the latter speculation, it points but a very short way; and in leaving it we find ourselves in a wilderness of conjecture, where to try to advance is to find ourselves ‘in wandering mazes lost.’

“With much more satisfaction do I return to the legitimate deductions from the phenomena we have had under review.

“In the survey which I have taken in the present course of lectures of the genesis, succession, geographical distribution, affinities, and osteology of the mammalian class, if I have succeeded in demonstrating the perfect adaptation of each varying form to the exigencies, and habits, and well-being of the species, I have fulfilled one object which I had in view,

viz., to set forth the beneficence and intelligence of the Creative Power.

“If I have been able to demonstrate a uniform plan pervading the osteological structure of so many diversified animated beings, I must have enforced, were that necessary, as strong a conviction of the unity of the Creative Cause.

“If, in all the striking changes of form and proportion which have passed under review, we could discern only the results of minor modifications of the same few osseous elements, surely we must be the more strikingly impressed with the wisdom and power of that Cause which could produce so much variety, and at the same time such perfect adaptations and endowments, out of means so simple.

“For, in what have those mechanical instruments—the hands of the ape, the hoofs of the horse, the fins of the whale, the trowels of the mole, the wings of the bat—so variously formed to obey the behests of volition in denizens of different elements—in what, I say, have they differed from the artificial instruments which we ourselves plan with foresight and calculation for analogous uses, save in their greater complexity, in their perfection, and in the unity and simplicity of the elements which are modified to constitute these several locomotive organs.

“Everywhere in organic nature we see the means not only subservient to an end, but that end accomplished by the simplest means. Hence we are compelled to regard the Great Cause of all, not like certain philosophic ancients, as a uniform and quiescent mind, as an all-pervading *anima mundi*, but as an active and anticipating intelligence.

“By applying the laws of comparative anatomy to the relics of extinct races of animals contained in and characterising the different strata of the earth’s crust and corresponding with as many epochs in the earth’s history, we make an important step in advance of all preceding philosophies, and are able to demonstrate that the same pervading, active, and beneficent intelligence which manifests His power in our times, has also manifested His power in times long anterior to the records of our existence.

“But we likewise, by these investigations, gain a still more important truth, viz., that the phenomena of the world do not succeed each other with the mechanical sameness attributed to them in the cycles of the epicurean philosophy; for we are able to demonstrate that the different epochs of the history of the earth were attended with corresponding changes of organic structure; and that, in all these instances of change, the organs, as far as we could comprehend their use,

were exactly those best suited to the functions of the being. Hence we not only show intelligence evoking means adapted to the end ; but, at successive times and periods, producing a change of mechanisms adapted to a change in external conditions. Thus the highest generalizations in the science of organic bodies, like the Newtonian laws of universal matter, lead to the unequivocal conviction of a great First Cause, which is certainly not mechanical.

“Unfettered by narrow restrictions—unchecked by the timid and unworthy fears of mistrustful minds, clinging, in regard to mere physical questions, to beliefs, for which the Author of all truth has been pleased to substitute knowledge—our science becomes connected with the loftiest of moral speculations ; and I know of no topic more fitting to the sentiments with which I desire to conclude the present course.

“If I believed, to use the language of a gifted contemporary, that the imagination, the feelings, the active intellectual powers, bearing on the business of life, and the highest capacities of our nature, were blunted and impaired by the study of physiological and palæontological phenomena, I should then regard our science as little better than a moral sepulchre, in which, like the strong man, we were burying ourselves and those around us in ruins of our own creating. But surely we must all believe too firmly in the immutable attributes of that Being, in whom all truth, of whatever kind, finds its proper resting-place, to think that the principles of physical and moral truth can ever be in lasting collision.”*

PROPERTIES OF NICOTINA, AND ITS EFFECTS ON ANIMALS.

By ALFRED TAYLOR, M.D., F.R.S.

NICOTINA, says Dr. Taylor, the alkaloid of tobacco, is frequently but incorrectly called *Nicotine*. The final “ine” is properly applied only to organic principles, the alkaline nature of which has not been determined ; but this, like strychnia or morphia, is an alkaline base, and it should therefore have a terminal syllable which marks at once its true nature. Some writers describe it under the name of *Nicotia*.

Having given the history of a case of poisoning by this agent in the human subject, he proceeds to describe its properties

* Sedgwick, ‘Address to the Geological Society,’ 1831.

and effects on animals as follows : "A specimen of this alkaloid was given to me by Dr. Hofmann. It had a pale amber colour ; when poured from the bottle, it flowed like a thin oil ; it gave a greasy stain to paper, which was speedily removed by evaporation ; and it evolved a peculiar odour, resembling stale tobacco smoke. When heated on platina it produced a dense, white smoke, acquired a dark colour, took fire, and burnt with a bright yellow flame, giving off an abundance of carbon as a thick, black smoke, and leaving a small quantity of carbon as a residue.

"Strong sulphuric acid in the cold did not carbonize it, but the nicotina acquired a reddish colour, which was deepened by heat. When the heat was continued, the mixture became darker, and white vapours of sulphurous acid, as well as of nicotina, were evolved. Sulphuric acid in the cold, with a crystal of bichromate of potash, produced, after a time, a green colour, from the separation of oxide of chromium. Fuming hydrochloric acid brought near to a drop of nicotina, produced dense white vapours of the hydrochlorate, resembling those caused by ammonia under the same circumstances. When heated, the hydrochlorate of nicotina escaped in dense, white vapours, leaving as a residue a carbonaceous stain. Nitric acid produced in the cold no change, but when heated the mixture acquired a dark orange colour. After a time, the acid was suddenly and violently decomposed with the evolution of nitrous acid vapour.

"Nicotina, in a concentrated state, is powerfully alkaline. Two drops dissolved in an ounce of distilled water gave to the liquid a strong alkaline reaction. The solution, in this diluted state, had the peculiar odour of the alkaloid. A piece of paper dipped in pure nicotina, when ignited, burnt with a yellow smoky flame, as if it had been dipped in oil. It is very soluble in water, alcohol, and ether ; and ether possesses the property of removing it, although not entirely, from its aqueous solution. The solutions have the odour and the other chemical properties of the alkaloid. In spite of its powerful odour, nicotina does not appear to be very volatile. It remains as a greasy-looking spot in a watch-glass, after many hours' free exposure to the air ; and even after twenty-four hours, the application of heat to the thin film of moisture in the glass led to the evolution of the peculiar pungent odour of this alkaloid. The vapour evolved from the pure alkaloid does not perceptibly affect test-paper like that of ammonia, although there are abundant white fumes produced on exposure to hydrochloric acid in both cases. If ammonia should be mixed with nicotina, that alkali is removed with the

water by simple exposure. The hydrochlorate of ammonia forms permanent dagger crystals; the hydrochlorate of nicotina is deliquescent, or only imperfectly crystallizes in short wide prisms crossing each other at right angles.

“Nicotina strikingly resembles ammonia in some of its properties, and as ammonia may result from the action of potash on organic matter, especially when heat is employed, it is necessary that an analyst should have the means of distinguishing nicotina from ammonia, and of separating one from the other. They both produce an orange-yellow precipitate with chloride of platina: when examined by the microscope the ammonia-precipitate is in octahedra or dodecahedra—the nicotina-precipitate is seen in groups of feathered crystals peculiar in shape and arrangement, mixed with well-defined octahedra. Both ammonia and nicotina are precipitated of a yellow colour, by arsenio-nitrate of silver, and white by corrosive sublimate. The striking chemical reactions in which they differ are these: iodine water has its colour discharged by ammonia; it is precipitated brown by nicotina: tannic acid produces a red colour with ammonia, without precipitating the alkali; it precipitates nicotina of a pale yellowish white, like the other alkaloids, but produces no change of colour; traces of ammonia are thus easily detected in a solution of nicotina by this reagent. Gallic acid rapidly imparts to ammonia a pink-red colour, while it produces no change of colour or precipitate in nicotina. The red colour produced by ammonia slowly changes to an olive green. Chloride of gold gives an amorphous brown precipitate of fulminating gold with ammonia, while it produces a plumose crystalline precipitate of a yellow colour in a solution of nicotina. Nitrate of silver yields with ammonia brown oxide of silver, soluble in an excess of the alkali; with nicotina it produces an opalescence not soluble in excess; and, on heating the mixture, silver is slowly reduced and separated. Permanganate of potash is scarcely affected in its colour by admixture with ammonia; but the colour is rapidly destroyed by nicotina even in a very diluted state. As ether and most organic substances discharge the pink colour of the permanganate, care must be taken that the nicotina is not combined with any of these matters. When we know that we are dealing with nicotina alone, a standard solution of permanganate of potash may be employed to determine the quantity present. The quantity of permanganate which has its colour discharged on admixture with a certain measure of nicotina, will be great in proportion to the strength of the alkaloid; and if the solution of permanganate be previously tested with a mea-

sured quantity of nicotina, the proportion present in an unknown case may be thereby determined. A solution of two drops of nicotina to one ounce of water is sufficiently strong to give all the reactions above described.

“As a summary of these distinctions between ammonia and nicotina, it may be stated, that nicotina is specially identified by its strong and peculiar odour, wholly unlike that of ammonia, either in the cold or when heated—by the precipitate, without change of colour, given by tannic acid—the reddish brown precipitate by iodine water—and the immediate destruction of the colour of a solution of permanganate of potash.

“If ammonia is mixed with nicotina, it may be separated either by spontaneous evaporation, or the mixture, neutralized by diluted sulphuric acid, may be carefully evaporated to dryness, and the residue treated with alcohol. Sulphate of nicotina is dissolved, while that of ammonia remains.

“*Experiment on a rabbit.*—A single drop of the pure nicotina, examined in the above-mentioned analysis, was placed at the back of the mouth of a healthy rabbit. The taste appeared to be affected, the animal frothed at the mouth, and a quantity of frothy mucus issued from between the jaws, which were closed.

“*Symptoms.*—In from fifteen to twenty seconds the animal lost all power of standing on its legs; it fell on its side, and was violently convulsed in its fore and hind legs; these were in rapid motion for half a minute, and the back was arched as in opisthotonos, but again speedily relaxed. The animal then lay tranquil for about a minute, when it was again suddenly seized with similar clonic convulsions; these ceased, and the animal appeared to be dead. The heart continued to contract for about half a minute, and then ceased. The animal died in three minutes and a half from the time at which the poison was placed in its mouth. During the convulsions, and after death, it was observed that a quantity of frothy mucus escaped from the mouth. This was strongly alkaline, and it was supposed to have the odour of nicotina; but as the air of the room was impregnated with the vapour, nothing certain could be said on this point.

“*Appearances.*—The body was examined in an hour and a half after death. The eyes were prominent and staring; the limbs were relaxed, but these became rigid about half an hour later. On opening the abdomen the stomach was found distended with food. When laid open, the only odour perceptible was that of sour green food. The coats were pale; and the blood-vessels were strongly marked in their course by the

dark-coloured blood which they contained. The intestines were pale, but there was great congestion of the vessels of the mesentery. The liver and kidneys were congested with dark-coloured blood; the lungs were pale and not congested; the right cavity of the heart contained a small quantity of blood of a dark colour, and in a partially coagulated state. The left cavities were empty; the blood which escaped during the inspection was fluid, and of a dark, claret-red colour, with a pinkish tinge when seen in a thin layer; on exposure to the air it became lighter in colour, but did not pass to a florid red. The colour of the blood was similar to that which I have occasionally seen in poisoning by prussic acid and the essential oil of bitter almonds.

“*Analysis.*—The parts removed for analysis were: 1, the stomach and its contents; 2, half an ounce of blood collected from the vessels of the abdomen; 3, the liver; 4, the heart, kidneys, and lungs; 5, the tongue, palate, and soft parts adjacent. None of these organs or parts had the odour of nicotina. This was only perceptible near the mouth of the animal, but it rapidly disappeared. The stomach contained about two ounces of green vegetable matter, which had an acid reaction—it had obviously undergone fermentation. Although examined within two hours of death, no odour of nicotina or tobacco could be perceived by four persons who were present. This led to the supposition that no part of the drop of the alkaloid which had destroyed life could have reached the stomach. The stomach and its contents were treated by Orfila’s process, as elsewhere described with the result that a small quantity of nicotina was separated, possessing the odour and properties assigned to this alkaloid.

“The half ounce of blood similarly treated also yielded nicotina in sufficient quantity to allow of the bare inference of its presence. The odour of the separated alkaloid was masked by some other organic principle. Some blood of an animal not poisoned by nicotina was submitted to all the steps of the analysis, with negative results. The liver, weighing two ounces, and the heart and lungs together, were separately examined by the same process, but nicotina was not detected in the tissues of these organs. The tongue, palate, and soft parts of the mouth, were similarly treated after a week. The membrane of the tongue was softened and readily peeled off: this effect was probably partly due to putrefaction, as one drop of the alkaloid would not have been sufficient to cause such local changes. In these parts, nicotina was distinctly present. A sufficient quantity was separated in a pure state, not only to lead to the recognition of the odour, but to allow of the application of all the characteristic tests.

“Hence it follows that, in poisoning by this alkaloid, even when the quantity remaining in the body is small, it admits of detection in the stomach and in the blood, but not always in the tissues. Of the single drop administered to the animal, a portion had clearly escaped with the frothy mucus and saliva issuing from the mouth. A minute quantity had passed into the stomach, and was diffused through a large quantity of food, while a trace was detected in the blood; but the largest quantity was found in the parts to which the poison had been directly applied, and which it had no doubt penetrated by imbibition. The results do not show that nicotina is not deposited in the viscera in cases of poisoning by it, but simply, when the quantity is small and death is rapid, that none may be found.

“*Pathological effects of Nicotina.*—The action of this poison upon animals has been lately investigated by M. Claude Bernard.* His experiments show that mammalia, birds and reptiles, are destroyed by nicotina under similar symptoms; and that whether applied to the alimentary canal, to a wound in the skin, or to the mucous membrane of the conjunctiva, its rapidly fatal effects are equally manifested. The arterial capillary system appears to be specially affected by the poison, through the medium of the sympathetic nerve. The circulation is here arrested, while the heart continues to pulsate. The veins are full, but they no longer convey the blood onwards. Nicotina appears to affect the nervous system of organic life, just as strychnia affects the nervous system of animal life, and convulsions in either case are among the most prominent symptoms. According to this view the influence of the sympathetic nerve is specially manifested on the vascular capillary system.

“Nicotina, like prussic acid, is a compound of carbon, nitrogen, and hydrogen. It contains no oxygen. Its formula is $C_{10}H_7N$. When exposed to air and light it undergoes a chemical change, and acquires a brown colour; its energy as a poison is thereby reduced. Bernard states that he found the *modus operandi* of the partially decomposed poison to be different from that of pure nicotina. The functions of the heart and lungs were directly affected by it; while the pure poison chiefly spent its physiological action on the capillary circulation. He also found that the perfectly pure nicotina produced tetanic rigidity of the limbs. These results may explain the different views which have been entertained of the mode in which nicotina operates. One set of experi-

* ‘Leçons sur les Effets des Substances Toxiques et Médicamenteuses,’ &c. Paris, 1857, p. 397.

mentalists have arrived at the conclusion that it acted exclusively on the muscular system, while another set have contended that the circulation alone was directly affected. The degree of purity of the nicotina may, in some measure, account for these differences.

“Convulsions are not a necessary attendant on this form of poisoning. There were none in the case of M. W—. They were observed in the experiment on a rabbit, but they were of a clonic, in place of a tetanic character. The temporary production of opisthotonos, however, proves that the spinal marrow was affected by the poison. The effects produced on the rabbit show the fallacy of relying upon the symptoms caused in animals as evidence of their character and course in the human subject.

“It is evident from the case which is the subject of this paper, as well as from the experiment on the rabbit, that nicotina produces changes in the blood. The microscope shows no appreciable physical differences; but the colour and consistency of this liquid are entirely changed. The whole of the blood, arterial and venous, acquires a purple-black colour, and the fibrine appears to be dissolved or broken up. Is it to be inferred from its chemical constitution that nicotina completely deoxidizes the blood with the rapidity with which it deoxidizes the solution of permanganate of potash, and that death is the immediate consequence of this universal deoxidation of the vital fluid? When exposed to air it reabsorbs oxygen to a slight extent, and acquires a ruddy hue. These facts may theoretically account for the rapid action of this poison on the body; but in addition to this mode of action, it appears to operate by causing a complete stagnation of the altered blood in the overfilled capillaries. In the case of M. W— the appearance of the various organs, as a result of capillary congestion, was such as I have never before seen. They appeared as if they had been dyed with a deep purple black dye. This condition, it must be remembered, is the result of the action of a poison in a *few minutes*—a period just sufficient for its circulation throughout the body. In the experiment on the rabbit the heart continued to beat, as in asphyxia, for a short time after all other vital actions had ceased; and this fact, viewed in connexion with the condition of the capillary system after death, appears to show that there is some foundation for the theoretical view of Bernard, namely, that this powerful poison destroys life by arresting the circulation from the circumference to the centre.”

DISEASES AMONG STOCK IN AUSTRALIA.

IN October last, Mr. R. Meston was commissioned by the Government to go on a cruise to some of the western and north-western districts of the colony, to inquire into the nature of the cattle diseases which had just previously been very prevalent and destructive, and which have frequently made their appearance, to the great injury of stockholders, and occasionally with loss of human life by contamination. Mr. Meston's services were partly voluntary, for we believe that the arrangement with him was that he should merely receive his travelling expenses. His report is dated 7th of December last, but has only just been issued. The subject is one well worthy of inquiry, for the loss of wealth at times to the colony by diseases among stock is very great. Many a flourishing squatter has been brought to beggary in a few days; and though the pastoral gentlemen are, on the whole, in a very flourishing condition just now, they cannot afford to despise the consideration of a subject which may at any time most materially affect their welfare. Cattle diseases are to the holders what floods and droughts are to the agriculturist, and what commercial crises are to the merchant—they sweep off in one season the gain of years. Considering how large a portion of the colony's wealth exists in its live stock—how the quality and quantity of the staple export, as well as the quality and quantity of the people's food, depends upon the good condition and the rapid multiplication of sheep and cattle, any investigation which may reveal the causes of disease, and disclose preventive measures, has a very tangible money value, and must be looked upon as something more than a mere scientific inquiry.

Mr. Meston commences his report by explaining that the popular phrase of "the Cumberland disease" is, like many other phrases in common use, rather a cloak for ignorance than an exposition of knowledge, and is used to describe ailments of very different characters, and arising from very different causes. One malady that he found had been very destructive is the "hoove." This was generated by the sudden springing up of spongy grasses and weeds after a long drought and extensive bush fires had been followed by rains. The cattle, previously reduced to the very verge of inanition, eat too ravenously; the spongy herbage swells and ferments in the stomach, and the animal "bursts." As the vegetation is rankest in the valleys, where the air is more moist and warm, the keeping of the cattle on the higher and

drier ground till they recover the tone of their stomachs, and till the heat has evaporated the dews, is a good preventive measure, whenever it is possible to accomplish it. But where the disease is developed, the administration of chloride of lime, or a pint of milk well mixed with soot, is stated to be a good remedy. But the best cure is to pierce the paunch and let off the gas; and Mr. Meston says that, though every farmer in England possesses the necessary instruments to do this, he only met, during all his peregrinations in Australia, with one squatter who had them. Generally speaking, he says, he found that cattle were left to their fate. Poor men, however, with only a team or two of bullocks, cannot afford to be so negligent, though others, with vast herds and wide runs, may be careless of the fate of a score or two of their beasts. It is important that the knowledge of simple and efficacious remedies should be widely diffused among that class whose little all is often invested in a few cattle, and to whom the loss of only one animal may often be for a time at least the deprivation of the means of livelihood. The marsh-mallow, and what is called the Scotch burr, are stated by Mr. Meston to be the most dangerous weeds in producing this disease, especially at the time when they are flowering.

The sharp prickly beard of a kind of barley that grows near Bathurst, Mr. Meston found to be occasionally fatal. Animals do not willingly eat it, but will do so occasionally when pinched by hunger, or when it gets mixed with other food. The prickles stick in their tongues and cheeks, and bring on ulcerations.

In Wellington and Bligh, catarrh has at times proved very fatal. Mr. Meston ascribes it in the first instance to the dirty mud holes in which the sheep are yarded, then to the process to which they are subjected at shearing time, when, after being washed, they are closely packed in the sweating pen, then shorn and turned adrift. If a sudden change of temperature and very cold nights should supervene, the animals suffer severely from cold, and the seeds of catarrh are sown. Mr. Meston intimates that shelter is the natural preventive for this. He also points out that, in too many cases, sufficient care is not taken to determine whether the soil of a run is best suited for cattle or sheep, or the quantity of stock it can fairly carry without detriment to the condition of the animals. Vegetation and the health of animals depend, he says, more on the subsoils than on the superstratum.

A kind of apoplexy, that he found had been very fatal among sheep near Molong, he thinks may be prevented by

removing the sheep from water as soon as their thirst is satisfied, and keeping them during the heat of the day in shady and breezy spots.

On the Clarence, many cattle were found to have suffered from eating the Moreton Bay chesnut.

The Cumberland disease has been observed by Mr. Busby, of Cassilis, to increase and decrease with corresponding changes of temperature. Mr. Meston intimates that the bad food cattle eat, in consequence of the overspreading of the pasturage by weeds, irritates the mucous membrane, and thereby predisposes the system to the inflammatory influences of hot weather. The denudation of the primitive pastures, unaccompanied by any attempt to supply fresh grasses, has, he considers, injured the healthiness of the herbage on many of the older runs. Mr. Moore, who accompanied Mr. Meston in his trip, gives a botanical appendix, in which he quite confirms the statement that a great change for the worse is visible in the pasturage of the settled districts, and that the evil is spreading with alarming rapidity.

Mr. Meston also intimates that ignorance in the management of stock has a great deal to do with the weakly constitution of many animals, and that the mysteries of breeding are but dimly understood by many of those who undertake to superintend stations. He has the audacity to say that the management of stock is an art only to be acquired by long practice, and that it is not altogether wonderful if, in a country where capitalists invest in pastoral pursuits almost as readily as they buy bank shares, many fatal blunders should be made. As a cure for such ignorance, he hints at the expediency of a professorship of agricultural and pastoral pursuits.

The sum and substance of Mr. Meston's report, therefore, virtually is to the effect that there are three principal causes of disease in stock—overfeeding after continued starvation—bad diet—and unskilful superintendence.—*Sydney Morning Herald*.

THE ENTERIC JUICE.

THE following are results arrived at after numerous experiments by Professor Busch, of Bonn: 1. Hunger is constituted by two sensations; the first is represented by the nervous system in general, and derived from the impoverished condition of the tissues; the second originates with the nerves of the digestive organs, indicating their emptiness. The former is removed only by the required assimilation of

nutritive elements, and not by merely filling the first passages. 2. The peristaltic motion of the intestines takes place with the same power within the abdominal cavity as when exposed to the atmospheric air. Its propelling power equals a column of water twenty-four inches high. 3. The alimentary canal has its periods of rest and action. 4. The quantity of enteric juice secreted is invariably small, and of alkaline reaction. Its per-centage of solids averages 5.47. 5. Enteric juice is capable of digesting amylaceous and protein substances. 6. Enteric juice converts starch into grape sugar. 7. Enteric juice prepares protein substances for assimilation under the phenomena of putrescence. 8. Enteric juice leaves cane sugar unchanged. 9. Cane sugar, absorbed as such, is not discharged in the urine. 10. Fat, unless exposed to the action of bile or pancreatic juice, is absorbed either not at all or in insignificant quantity. 11. Food appears between fifteen or thirty minutes after being taken in the superior third of the small intestine. 12. Solution of cane sugar disappears in part before entering the small intestine; all that enters the larger is converted into grape sugar. 13. Raw albumen taken from hens' eggs is directly absorbed in the stomach and the adjoining portion of the small intestine. All that descends to the lower portion of the larger is unchanged. 14. Gum is not converted into sugar, but remains unchanged. 15. Gelatine is dissolved, and loses thereby its coagulability. 16. Casein remains partly dissolved in the digestive fluids. 17. Fat is entirely emulgated by the digestive fluids when alkaline or neutral, but partially when acid. 18. The digestive liquids of the small intestines possess digestive powers over protein substances. 19. The minimum of all digestive fluids entering the small intestine in the course of twenty-four hours, amounts to more than the seventeenth part of the weight of the body.—*Medical Times and Gazette*.

ON THE EMPLOYMENT OF IODIDE OF SODIUM.

By ALEXANDER URE, Esq., F.R.C.S.

“I SUBMIT to the profession the following observations respecting a medicine, which will, I trust, be found useful in practice. Iodide of sodium is met with in the ashes of seaweed, and of various plants which grow on the sea-shore. To this source may be reasonably ascribed the belief entertained in the healing virtues of sea-weed by inhabitants of the coast in different parts of the globe. Professor Laycock,

in an ingenious address which he delivered at the pharmaceutical meeting in Edinburgh last November, and which is published in the 'Pharmaceutical Journal' of the month following, states that 'in the pampas of South America, where goître is prevalent, the remedy, a so-called goître-stick, is nothing more than the thick stem of a sea-weed.' Mr. Cooper, in his 'Surgical Dictionary,' recommends for some scrofulous affections the use of poultices of sea-weed.

"Iodide of sodium, as a therapeutic agent, is and ought to be more active than iodide of potassium, since it is richer in iodine. According to Gmelin, iodide of sodium contains 84.45 parts of iodine in the hundred, while iodide of potassium contains but 74.27, the proportion of sodium, though small, being still sufficient to cover the irritative quality of its associate.

"As far as my experience goes, iodide of sodium is a blander salt, more assimilable, and better borne by the stomach, than iodide of potassium. It is, moreover, much less prone to produce symptoms of iodic disturbance. Patients under my care have taken it steadily for weeks together, without suffering the slightest inconvenience, and with uniform advantage as regarded the morbid condition. On no occasion, save one, has there been any complaint made of this medicine producing sense of weight or uneasiness referred to the stomach, nausea, impaired appetite and digestion, headache, running from the eyes and nostrils, general nervous depression—symptoms which at times supervene during the administration of iodide of potassium, even in moderate doses. The instance in question was that of a puny, scrofulous boy with disease in both knee-joints.

"As a general rule, the preparations of soda are milder in their operation on the system than those of potash. If, moreover, the important view, first announced by M. Dumas, in the 92d volume of the 'Annales de Chimie,' be accepted, that there are certain salts which leave the blood the faculty of becoming arterialized, while others deprive it of this property, and that the salts having soda for their base are more proper to maintain this condition of integrity than those of potash or ammonia, it may be fairly assumed that the former are likely to exercise a more favorable remedial influence than the latter, especially if exhibited continuously for a length of time. Soda, variously combined, is diffused extensively throughout the organism; fully five sixths of the saline constituents of healthy blood consists of salts of this base.

"Iodide of sodium may be prescribed in all cases in which the employment of iodide of potassium is indicated, as anti-

dotal to various constitutional symptoms of syphilis, chiefly of the so-called tertiary group, and where mercury has been properly used beforehand ; in certain forms of rheumatism ; in chronic affections of the joints and bones of a scrofulous character, particularly where a stealthy inflammatory process has determined copious fibro-plastic deposition or hypertrophy. If judiciously administered, it may be given in progressively-increasing doses, where it is desirable to produce a decided alterative effect on the system. M. Gamberini has furnished a brief notice respecting its use in the volume of Schmidt's 'Jahrbücher' for 1858. Reference is made to 116 cases of constitutional syphilis in which it had been exhibited, and where it was found to have acted more rapidly than iodide of potassium, and often proved efficacious where the latter drug had been of little or no avail. It is there recommended to be given as follows: one scruple is to be dissolved in three ounces of distilled water, and this is to be swallowed in divided doses in the course of the day. After the lapse of two or three days, the above amount is to be augmented by the addition of six grains; and so on until eventually the patient comes to take two drachms, or even more, of the salt daily; the time for taking each dose being an hour before meals.

"Hitherto I have usually prescribed the iodide of sodium to the extent of five or six grains twice or thrice daily, dissolved in four ounces of compound decoction of sarsaparilla, which forms a convenient vehicle; occasionally, in pure water, with the addition of five grains of bicarbonate of soda to each dose; this serves to counteract acescency, and the consequent liberation of hyriodic acid in the stomach, which is sure to cause headache. In scrofulous complaints, I have given it combined with cod-liver oil, and with manifest benefit. A remarkable and unexpected effect was observed in one instance under this treatment for diseased bone, where a marked improvement of sight ensued from diminution of a nebulous condition of the cornea. In constitutional syphilis, I have found it advantageous occasionally to conjoin the use of the iodide with that of bichloride of mercury, should mercury have been previously withheld, or imperfectly introduced into the patient's system.

"As a general rule, the iodide ought to be administered in plenty of liquid, and not on an empty stomach, as suggested by the above writer. It is readily soluble in water, has a cooling, saline taste, certainly preferable to that of the potassium compound, and by no means equally persistent in the throat."—Condensed from the *Lancet*.

REPORT ON THE CATTLE PLAGUE, STEPPE MURRAIN, OR RINDERPEST.

By JAMES BEART SIMONDS, Professor of Cattle Pathology
in the Royal Veterinary College, London.

(*Concluded from p. 366.*)

AUSTRIA.

In our return journey from Galicia we visited Vienna, and went from thence to Munich, Stuttgardt, and Frankfort, with a view of ascertaining, by a personal examination, the state of things in Southern Germany and Rhenish Prussia. In no division of the Austrian dominions, except Galicia, has rinderpest prevailed during the present year. Bohemia, Moravia, and even Hungary have been entirely free from it. The disease existed in several parts of the empire in 1855 and also in the following year, but it was suppressed in the usual manner. It was introduced on that occasion from Bessarabia, whence it appears that it generally comes.

Some anxiety had been felt for fear the malady might be disseminated by the bringing together of animals from different countries at the great Agricultural Exhibition which took place at Vienna, in May of this year (1857); and the directors of the show, early in April, issued a notice, in which they stated "that the cases of disease which had occurred in Moldavia and Silesia had been confined altogether to the individual animals which had been imported, and that the cattle of the country were free from all murrain." It was further notified, that on the days appointed for the admission of animals for exhibition, the transport to Vienna of *cattle for the slaughter-house* would not be permitted by railroad, and that the conveyance of those intended to be exhibited would be effected in perfectly new waggons.

The extent of the last outbreak in Austria, its duration, &c., will be shown by the following official report. (See Table on the succeeding page.)

REPORT ON THE STATE AND PROGRESS OF THE RINDERPEST IN THE AUSTRIAN EMPIRE IN THE YEARS 1855-6.

<i>Governments.</i>	<i>Date of the breaking out of the Disease.</i>	<i>Date of the receipt of the last Reprt.</i>	<i>Number of cattle in the whole District.</i>	<i>The Disease existed in</i>			<i>Number of cattle in the affected Villages.</i>	<i>Result.</i>			<i>Date of the disappearance of the Disease.</i>	<i>Remarks.</i>
				<i>Circles.</i>	<i>Villages.</i>	<i>Farms.</i>		<i>Escaped.</i>	<i>Deaths.</i>	<i>Slaughtered.</i>		
Bakowine	1855. October 3	1856. April 15	8,121	—	16	—	699	332	367	—	1856. April 15	{ 105 in quarantine at the date of the Report
Cracow	August 29	Jan. 31	11,667	2	23	—	881	70	787	24	Jan. 31	
Lemberg	August 29	Nov. 4	79,315	8	200	1,723	8,113	1,679	6,232	97	—	
Ofen	August 20	Nov. 2	49,859	9	85	—	13,335	10,409	2,916	10	—	
Oldenburg	August 5	Jan. 31	8,235	8	21	481	1,981	950	1,006	25	Jan. 31	
Grosswardein...	May 2	Jan. 28	8,632	1	3	8	3,375	2,343	1,030	2	Jan. 28	
Pressburg	July 23	Feb. 15	54,246	9	114	4,314	15,760	7,845	7,845	70	Feb. 25	
Katchau	July 1	April 8	38,142	6	106	2,926	11,068	6,379	4,575	114	Feb. 28	
Moravia	Sept. 4	Mar. 16	11,568	41	17	507	1,553	230	915	408	March 16	
Upper Austria..	October 29	Jan. 4	636	2	3	3	8	—	2	6	Jan. 4	
Lower Austria.	1856. Feb. 21	Mar. 12	127	1	1	2	11	—	3	8	March 12	
Total	—	—	270,548	87	589	9,964	56,784	30,237	25,678	764	—	

The facts set forth in this report are so explicit, that no comments thereon are required, and therefore we proceed to state, that after leaving Austria, we made our way into

BAVARIA.

This country, in common with so many others which we had previously visited, has been perfectly free from the rinderpest, since from 1813 to 1815. Its outbreak at that time was referable to the same cause as in Belgium, &c., *namely*, the passage of the Austrian army into France.

Professor Nicklas, of the Munich Veterinary School, who had returned earlier than ourselves from Galicia, informed us that pleuro-pneumonia was the chief epizootic disease which now existed in Bavaria, but that it had not prevailed to any considerable extent of late years. The sanitary laws to limit its spread are similar to those in other countries, being founded on the fact of the contagious nature of the affection. Animals which have recovered from an attack are marked on their horns with the letters L. S., signifying that they have been the subjects of *Lungenseuche*, it being thought that from the partial disorganization of their lungs they may be the means of spreading the disease for several months after their convalescence.

With regard to the rinderpest, the laws are very severe; and through the kindness of Professor Nicklas, we are enabled to give the following details of their provisions:—

“During the continuance of the pest, no cattle, dead or alive, are allowed to be brought across the frontier. Flesh, hides, entrails, horns, hair, and tallow of cattle, and bones—whole or crushed—of any animal, with their hair, wool, or bristles, are also especially prevented crossing by the *cordon*; as are woollen cloths, scutchings of leather, feathers, farmyard manure, hay, clover, straw, and all other description of cattle fodder.

“When the disease occurs on a farm, the affected animals are not removed from the sheds, but the apparently healthy are taken to the quarantine station. Each commune is obliged to provide a station of this description, which is built of wood and divided into two parts, one for the doubtful cases, and the other for the supposed healthy.

“The Commissioners have the power of allowing medical treatment of the animals; but the veterinary surgeon must remain in the quarantine and receive all he requires at the end of a long pole. All churches, schools, and public-houses of the district are closed, so as to prevent the congregating of people together, and remove those inducements which might cause persons to come from the infected farms.

“On the occurrence of illness among cattle from *other* causes as well as the pest, the Commissioners do not, as a rule, approach the animals, but, standing at a distance, and within sight of them, they arrive at a decision as to the nature of the ailment, frequently ordering some

food to be offered as a test of their freedom or otherwise from the malady. In those instances where the Commissioners enter the stable, they are compelled, before leaving, to wash their hands, &c., with vinegar, and have their clothes fumigated with chlorine gas.

"All dogs, cats, rabbits, domestic poultry, pigeons, &c., have to be kept in places of security and close confinement. If the disease exist in a village through which a high-road runs, the course of the road is turned, if possible; but when this is not practicable, then a guard accompanies the several travellers who arrive at the boundaries of the *cordon*, to see that they do not go upon any infected premises. The *cordon* is frequently maintained by the peasants: none, however, are taken for this purpose from an infected village, but the selection is made from contiguous villages or farms where the cattle are healthy.

"As soon as the malady is observed in a commune, notices are sent to all the surrounding places so that precautionary measures may be immediately adopted by the owners of cattle. Each commune has to provide a place for the burial of the animals which die or are slaughtered, and also a waggon and horses to carry them upon: and, on the disease passing away, the waggon is burnt, and the horses are washed with a solution of chlorinated lime. The place of interment is likewise enclosed, and not allowed to be disturbed for several years.

"On an inspection of supposed cases, the animals which give indications of the malady by spasmodic twitchings of the muscles are ordered by the Commissioners to be taken to the burial ground, where they are killed, and interred with their skins on, these being cut in the usual manner. Occasionally, a special order of the Government permits the removal of the skins, which are then to be subjected to a disinfecting process, under the immediate superintendence of the Commissioners. If only a few cases occur in a large herd of cattle, the Commissioners have the power to suspend the slaughtering of the exposed animals for a few days, in order to watch the result: such animals have a value put upon them, which is paid by the Government. Should no animal fall ill within twenty days from the death or slaughtering of the last case, then the quarantine is raised; but the cattle which have been liberated are not allowed to go near to others until they have been washed with a solution of chlorinated lime. On the discharge of the animals, the quarantine station is razed and burnt.

"The Commissioners have to report day by day every occurrence to the Government, and to give the fullest particulars, even to the names of the persons employed at the *cordon*, and the age, colour, sex, &c., of the cattle in the quarantine. The hay on a farm at the time the pest occurred is not allowed to be used for cattle, but must be consumed by horses and sheep."

Such are the regulations existing in Bavaria; in substance they agree with others which have been previously given, but nevertheless we are of opinion that they should find a place in this report, as several of the details are singularly minute in providing against an extension of the pest. A great difficulty must evidently belong to the carrying out of the requirement respecting the consumption of the hay, and more particularly if the malady should break out in the autumnal period of the year, as then nearly the whole crop would be in

store. This regulation, we believe, has been enforced, because it not unfrequently happens that, in accordance with custom, the whole of the hay of a farm is placed on strong floors above the cattle-sheds, and not put into ricks as in England.

WURTEMBERG AND THE SURROUNDING GERMAN STATES.

We learned from Professor Hering, of the Veterinary School at Stuttgart, that, like Bavaria and other adjacent kingdoms and states, Wurtemberg had experienced no outbreak of the rinderpest since 1815, and that its existence at that time was also due to the movements of the Austrian army. The regulations of the sanitary police are almost identical with those in force in Bavaria, both with regard to the rinderpest and also pleuro-pneumonia.

Cattle are reared in large numbers in this kingdom, and are fed for the market principally by the sugar-manufacturers, distillers, and brewers. When fat, they are exported for the supply of the French towns, and Paris in particular. With the exception of Swiss cattle, which are imported for the improvement of the native breeds, very few animals are sent into Wurtemberg from any other country.

RHENISH PRUSSIA.

It could hardly have been expected that this province would be found otherwise than perfectly free from the cattle pest: indeed, in our inquiries of veterinary surgeons, it was somewhat singular that we did not meet with one who had even seen a case of the disease.

Our investigations into the extent of the malady may be said to have been here brought to a close, and to have shown among other things, that even should a revival of the export trade in cattle, which has been spoken of in a former part of this report, take place to England through Holland, by means of the Rhine, there would be no risk incurred of introducing the rinderpest thereby, unless circumstances should unfortunately arise, by which it became as rife as it was in the years 1813, -14, and -15.

As the limits which are ordinarily assigned to reports of this description may have possibly been exceeded, we feel that it would not be right to make any additional observations which are not of a practical character, and therefore we shall content ourselves by appending a summary of the facts which have been ascertained by us in the fulfilment of our mission.

CONCLUSIONS.

1. That all the countries of Northern and Western Europe from which cattle are exported to England are perfectly free from the Rinderpest ; and that the only disease of an epizootic or destructive nature which prevails therein is the one known to us as Pleuro-pneumonia, which disease has existed here since 1841.

2. That in the greater part of the official despatches and reports which have been forwarded to the Government, and by them transmitted to the Royal Agricultural Society of England, the Rinderpest has been confounded with Pleuro-pneumonia, "Milzbrand," and other destructive maladies to which cattle are liable.

3. That the Rinderpest is a disease which specially belongs to the Steppes of Russia, from which it frequently extends, in the ordinary course of the cattle trade, into Hungary, Austria, Galicia, Poland, &c.

4. That whenever circumstances have arisen which called for the movements of troops, and consequently the transit of large numbers of cattle, in Southern and Eastern Europe, and particularly when Russian troops have crossed the frontier of their territory, the disease has been spread over a far greater extent of country.

5. That the disease which has recently prevailed in Galicia—where it was specially investigated by ourselves—as well as in Poland, Austria, Hungary, the Danubian Provinces, Bessarabia, Turkey, &c., is the true Rinderpest, or Steppe Murrain of Russia.

6. That with the exception of a few places in the kingdom of Prussia and others in Moravia, near to the frontier of Galicia and Poland, the disease in its outbreaks of 1855, -56, and -57, did not extend to any country lying westward of a line drawn from Memel on the Baltic to Trieste on the Gulf of Venice.

7. That, speaking in general terms, Rinderpest has not existed in Central and Western Europe for a period of forty-two years ; its great prevalence at that time being due to the war which was being then carried on between the different Continental kingdoms and states.

8. That all the facts connected with the history of its several outbreaks concur in proving that the malady does not spread from country to country as an ordinary epizootic. And that, if it were a disease exclusively belonging to this class, the sanitary measures which are had recourse to throughout Europe would be inefficient in preventing its

extension ; and consequently that in all probability we should long since have been both painfully and practically familiar with it in this country, as hundreds of our cattle would have succumbed to its destructive effects.

9. That it is one of the most infectious maladies of which we have any experience, and that it is capable of being conveyed from animal to animal by persons and various articles of clothing, &c., which have come in contact with the diseased cattle.

10. That the ox tribe is alone susceptible to the disease ; and that the morbid matter on which it depends lies dormant in the system for a period of not less than seven days, and occasionally, according to some Continental authorities, as long as twenty days, before the symptoms declare themselves.

11. That an attack of the disease which has terminated favorably renders the animal insusceptible to a second action of the *materies morbi* which gives origin to the pest.

12. That the deaths often amount to 90 per cent.

13. That the malady is one in which the blood is early, if not primarily, affected ; and that subsequently the mucous membranes throughout the entire body become the principal seat of the morbid changes.

14. That the symptoms are in general well marked and quite characteristic of the affection.

15. That all varieties of medical treatment which have as yet been tried have failed in curing the disease ; the recoveries which take place having for the most part depended on the *vis medicatrix naturæ*.

16. That no fear need be entertained that this destructive pest will reach our shores. Its present great distance from us would, of itself, afford a fair amount of security ; but when we add to this that no cattle find their way from thence, directly or indirectly, to the English market ; and also that in the event of the disease spreading from Galicia, it would have to break through hundreds of military *cordons*, one after the other, before it could possibly reach the *western side* of the German states ; and, moreover, that for years past commerce has been unrestricted with regard to the importation of skins, hides, bones, &c., of cattle from Russia and elsewhere, all alarm, we believe, may cease with reference to its introduction into the British Isles.



Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire, Bruxelles,
February, March, and April, 1859.

CHARBON IN PIGS.

By M. WILLEMS, of Haecht.

THIS malady attacked in preference adult animals and especially those which were in an advanced state of fattening.

The invasion commenced by prostration of the vital powers, to which succeeded plaintive cries and convulsions; the respiration became laborious, the mouth open, and the nose hot; and soon reddish-coloured spots appeared on the ears and under the belly. These quickly changed to a dark red purple, and black colour, when diarrhœa set in, the dejections being fetid. These alarming symptoms generally terminated in death within from two to four hours.

Autopsia.—On laying open the superficial spots, a yellowish-brown serum oozed out from them; the lining mucous membrane of the intestines was found to be infiltrated and of a purple colour; the lungs gorged with blood, the serous membrane of the chest covered with spots of ecchymosis, and the bronchial tubes filled with a limpid bloody liquid.

In some cases the progress of the malady was slower than others, but the animals quickly fell into a state of marasmus, accompanied with paralysis of the limbs, and although their death was retarded, it was nevertheless certain.

This disease showed itself principally in two villages, which were situated below the level of the canal, and surrounded by pools of stagnant water. Evaporation exposed a quantity of noxious mud, and the action of the rays of the sun on this disengaged a pestilential miasma. This water the pigs had also to drink.

M. Willems likewise mentions the poisoning of two cows by means of phosphoric or congreve matches, but he gives no particulars of the symptoms &c.

HYPERTROPHY OF THE HEART OF A HORSE.

At first sight it would have been difficult to perceive that anything ailed this animal; but the information gained was, that when in harness he would suddenly stop, breathe with great difficulty, and become so much affected, that in two or three minutes he would fall down in a fit. This would last for a short time, but recur at intervals if not stopped from his work. The collar was found to be sufficiently large, and even easy.

The symptoms were, irregular respiration, nostrils expanded; often he made a deep inspiration like sighing; the eyes were bright, the pulse full, hard, and intermittent. Nothing abnormal could be detected in the lungs by auscultation; but at the heart tumultuous and resounding beatings were heard. There was an absence of venous pulsation, and the contractions of the auricles persisted after those of the ventricles had ceased; this explains the intermittency of the pulse. The horse was put into rapid action for an instant, when the difficulty of the respiration recurred, and was followed by syncope. Pressure against the region of the heart produced great pain, which the animal flinched from.

Causes.—The etiology of this affection was very obscure. The information obtained was, that the horse was of a very nervous temperament, and a violent worker, forcibly drawing, whenever any difficulty presented itself, the whole of the load.

The treatment consisted in the abstraction of blood in small quantities, giving Digitalis, and enjoining a low diet and perfect quietude.

The cure was complete in two months.

ENDOCARDITIS IN A COW.

It was stated that this cow had been fighting with another in the stable, and the men had some difficulty in separating them.

The symptoms presented were, tympanitis, laboured respiration, the neck extended, and endeavours made to eructate; the hairs on the head were erect, which was not the case on any other part of the body. The nose was moist, the pulse strong and intermittent, the artery distended. The venous pulsation was strongly marked, and pressure made over the cardiac region was very painful to the animal, but auscultation

tion could not be resorted to on account of the restlessness of the patient. There could not, however, be any mistake; the symptoms belonged to an affection of the heart, but whether acute or chronic could not be determined.

The treatment had recourse to consisted of bleeding, judicious dieting, and the exhibition of the potassio-tartrate of antimony. The next day the tympanitis had disappeared, and the patient seemed better; but on a careful examination it was found that organic lesion of the heart existed. The hairs on the head had now the appearance of a brush, and this peculiarity was confined to the head only. The treatment was continued for three days longer, when all the symptoms becoming aggravated, the animal was ordered to be killed.

Autopsia.—There was considerable effusion into the sublingual and substernal regions, and on opening the thorax the pericardium was found to be distended with fluid of a yellow colour. In the right ventricle endocarditis was found to exist. The membranes and valves were thickened, and crepitated under the scalpel. The left ventricle was not entirely free from disease.

Journal des Vétérinaires du Midi, for Feb. and March, 1859.

TETANUS IN A COW.

WHEN the animal was admitted she had been attacked twenty-four hours. The symptoms were, stiffness in all the legs, which resembled props supporting the body; all movement was difficult, as she could not bend the joints; the neck was extended, the ears stiff and straight; the trismus was complete, so that it was impossible to open the mouth; and the contraction of the muscles generally was such that the whole body turned as one piece. It would be useless to state that there was an entire cessation of rumination. The pupils were dilated on slightly tapping on the head; the haw was protruded over the eye, so as to cover the whole globe; the respiration was difficult, but somewhat slow; the artery hard, pulse beating 40 in the minute. If the mouth were attempted to be opened, or the animal made to perform the slightest movement, the spasms became so violent that at every moment there was the greatest danger of her falling to the ground; the body became covered with a profuse sweat; the respiration increased to 49 in the minute; the pulse

quick, and the beatings of the heart strong. This state of excitement would last for about five minutes, to reappear whenever the same cause was renewed.

The next day the contractions were much increased, particularly of the muscles of the body; the tail was stiff and elevated; any movement was impossible, but the respiration and the circulation were the same. In the evening of the same day she fell down like an inert mass; the limbs and neck were extended; the respiration was diaphragmatic and laborious; the pulse could no longer be felt; the extremities became cold, and death speedily followed.

The treatment consisted principally of fumigation with belladonna and injections of the same, with warm clothing, but it proved of no avail.

Autopsy.—The muscles were of an intense red colour, and the cohesion of their fibres seemed to be lessened. The pia mater and the choroid plexus were highly injected, the substance of the brain was of a brownish colour; it also appeared of a less consistence than natural. These were the only lesions found in this case.

REMARKABLE CASE OF SUPERFŒTATION IN A MARE.

Communicated by P. CHABAUD, Doctor of Medicine.

IN the commune of Verniolle (Ariège) Jean Rougé put a mare that was horsing to an ass, which covered her. As the œstrum continued on her, she was covered by a stallion fifteen days after this. Nothing unusual occurred during the time of gestation, and when her time had expired she had a fine healthy foal; but in spite of this the pains continued, and, to the astonishment of Rougé, in ten minutes after a mule was born also, which was healthy and of good conformation. The mare suckles the two, and they are doing well. Evidently these two cannot be considered as twins, for here is the existence of two males of different species.

ABSCESS IN THE ABDOMINAL CAVITY, WITH HYPERTROPHY OF THE LEFT KIDNEY, OF A HORSE.

By M. REBOUL, Vétérinaire à Coursan (Aude).

THE subject of this case was a nine-year-old horse, which had always presented some peculiarities. As a foal, he did

not do so well as the others, and was called by the stud-man "Misery" on account of it; nevertheless, he attained the age of four years, not only without having had any malady, but also without having improved in his physical condition. He had a narrow chest, a slender neck, was tucked up in the flanks, and always much emaciated. In 1852, the stud to which he belonged was attacked by an epizootic; but although the malady was very severe, there were not many victims to it. It was attended with abscesses about the throat, head, and neck; sometimes complicated with an accumulation of pus in the guttural pouches and the supra-orbital fossæ. "Misery" with two others had the disease; and the latter died. They had no cough, nor were there any external abscesses.

The autopsy of the two that died showed, amongst other lesions, a collection of purulent matter in the peritoneal sac, with deposits of pus in the mesenteric ganglia, some of which had acquired a considerable size, and all contained a pultaceous whitish mass, more or less viscid.

On the 10th of February, 1856, the author was sent for to attend a case of lameness, which had presented itself without any apparent cause. The patient in this case was no other than "Misery." He was rather leaner than before, which was attributed to the scarcity of food at that period of the year. The lameness existed in the fore leg. The usual remedies were resorted to, but the animal got no better.

On the 22d the lameness had sensibly increased, but the respiration was calm and regular, and the pulse, although slightly depressed, presented nevertheless nothing abnormal. The movements of the lame leg were very limited, and the ilium on the same side was observed to be much lower than the opposite one; there was also a wasting of the muscles on the same side. It was supposed that the animal had had a fall, and that there might be a fracture close to the coxo-femoral articulation. A generous diet was recommended, and local treatment adopted.

On the 23d of March, a considerable swelling appeared on the inside of the thigh; the animal was dull and feeble, resting his head on the manger, and he had lost his appetite; the respiration, however, was regular. Soon there existed a fluctuating tumour on the inside of the flank, close to the thigh, which, being opened, discharged about three litres of grumous matter, of a whitish-yellow colour. The patient after this seemed much relieved; the coxo-femoral articulation recovered much of its freedom of action, and

the lameness was hardly perceptible. From April, 1856, to February, 1857, the animal continued in comparatively good health, but during the space of nine months six abscesses had formed in succession and at different parts of the body.

On the 10th of April the patient was destroyed.

Autopsia.—In the abdominal cavity an enormous tumour was found to exist, which occupied nearly the whole space towards the kidneys which is left by the peritoneum. It was principally inclined to the left side. Passing under the spine, it extended to the right kidney. The weight of this mass was six kilogrammes, and it was supposed to be hypertrophy of the left kidney.

METEORIZATION, &c., IN SHEEP.

By M. MIGUEL, Vétérinaire.

AN ignorant and idle shepherd conducted a flock of sheep in the afternoon, when the dew and dampness could not but be dangerous, into a field covered with the wild red poppy, just ready to blossom. In about half an hour after they were all meteorized, and seven of them dropped down dead, as if they had been struck by electricity. Forty minutes after, M. Miguel was on the spot. He found the dead ones lying on the ground, and by the side of their still-smoking carcasses, one had its flanks torn into tatters; the rumen, the muscles, and the skin, having been burst by the explosion. He found the red poppies to be hardly masticated, and evidenced by their repelling odour.

Some of them had rejected large quantities by the mouth. In others there was prolapsus ani to the extent of sixty centimetres. Two of them had died in the act of vomiting. The remainder of the flock was affected with hoven, and it was found necessary to puncture the rumen, which was done with the ordinary bistoury. Afterwards they recovered, without any further trouble.

On examining the substance vomited, it was difficult to conceive how the natural openings could have given passage to such enormous masses. Those who witnessed this catastrophe reported that the vomiting and the prolapsus ani were accompanied by a loud sound, but that the bursting of the rumen was frightful, the animal falling down dead at the moment of the explosion.

THE VETERINARIAN, JULY 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

PROFESSOR SIMONDS' REPORT ON THE RINDERPEST.

THE present number contains the conclusion of Professor Simonds' Report on the Rinderpest.

We have diffused it over a goodly portion of the Journal, lest by its length we should weary our readers ; and, indeed, for some time we allowed an interruption of its publication to occur, until we were solicited to continue it.

As one may be permitted, even in his editorial office, to speak of the doings of another, so we hesitate not to state that, in years yet to come, this report will be referred to by the members of the veterinary profession with both satisfaction and profit. It alike redounds to the credit both of Mr. Simonds and Mr. Ernes, and we think that the Royal Agricultural Society of England was extremely fortunate in obtaining the services of two persons so admirably calculated to accomplish their allotted work ; the one possessing scientific knowledge, combined with energy of mind and a determination to acquire all the information that could be obtained ; the other knowing well the countries through which they had to travel, and so familiar with the different languages spoken, that without this those pertinent inquiries, so necessary for the eliciting of the truth, could not have been made ; while both were practically conversant with the duties of their profession, and each was alike imbued with a love of investigation, and brought to bear, on the facts developed, a mind perfectly unprejudiced by any preconceived notions of the disease, which to them was perfectly novel in many of its characters.

On these grounds we think we may venture to congratulate, not only the members of the Agricultural Society of England and our own profession, but the community at large, on the result; since the time may come—although there is no fear at present—when this formidable malady will reach our own shores through the introduction of foreign cattle; for who can say what countries will not be involved, what changes not necessitated, now that the demon of war has been aroused from his slumbers, and his oriflamme is brandished high under the guise and in the name of liberty? Would that man's reason had been appealed to rather than his passions, and that Peace—under whose benign influence the arts and sciences make progress, and the nobler faculties of man are called forth into active exercise for the good of his fellow man—had been allowed to continue unbroken; till nations having forgotten the devastating art of war, their rulers had not dared to bring their armies into the field, to mutilate and slay each other. “*Bella! horrida bella!*”

ON POISONING BY YEW.

THE case communicated by Mr. Stephenson, of a colt having been accidentally poisoned by eating of the leaves of the yew tree (*Taxus baccatæ*)—although very many similar instances are to be found in the archives of veterinary medicine—reminds us that the nature of the active principle of the plant has not yet been ascertained. Is it not a subject worthy of investigation? That it is a narcotic in its influence seems to be proved by life being often by it suddenly withdrawn, and no visible effects left on any of the organs. Moreover, it is said powerfully to reduce the action of the heart and arteries when it has been given for some time, resembling, in this respect, digitalis, although, unlike it, it does not accumulate in the system. Narcotics, it is

well known, produce their action upon the brain and nervous system. They cause no local chemical change, and when they prove fatal rarely do they leave behind them any remarkable appearances; a slight inflammatory blush alone pervading the mucous lining membrane of the stomach and alimentary canal, as is the case with hydrocyanic acid, &c.

The statements made respecting the effects produced by the yew are varied, and the discrepancies great. Sometimes comparatively small quantities have sufficed to destroy life; at others, very large ones have been productive of little or no inconvenience to the animal. It is well known that horses, cattle, deer, and sheep, partaking of the yew leaves, become sensibly affected by them, and death very frequently is the result; yet the Germans often mix them with the food of their cattle, and it is stated that they tend to fatten them. It has been conjectured that, through the digestive process becoming thus active, induced by the presence of food, the poisonous principle is not developed, or if developed, it is assimilated. Is it a *product*, then, and not a true *educt*?

That this is to a certain extent true is proved by the inquiries instituted by Viborg, Husard, and others, who gave the leaves of the yew, in doses of from eight to twelve ounces, to horses when fasting, and they caused death in a few hours after, the animals falling down suddenly, and dying without manifesting any pain or suffering. Yet the like quantities, being mixed with oats and exhibited to other horses, were eaten with impunity by them. This was repeated over and over again, and the results were always the same. In a former part of this number it is stated that the same thing obtains with the ergot.

Some experiments were performed many years since at the Royal Veterinary College, the notes of which are before us, in which a pound of yew leaves was given to a horse, and they caused death in a few hours afterwards. Subsequently, the like quantity was administered to three other horses. In two of them the pulse became accelerated, but soon returned to its healthy standard; the pituitary membrane was blanched, and the appetite impaired for a day or two. In the third case,

the leaves were first boiled, and the decoction given as a draught. This was followed by a lowering of the pulse four beats in the minute. On the animal being destroyed soon after, no lesion of any of the tissues was found to exist. Professor Simonds gave no less a quantity than nine pounds ten ounces of the leaves of the yew, in seven consecutive days, to a horse, without their producing any remarkable effects on the animal, and certainly none to create any alarm.

To account for this difference of action, mere conjectures have been resorted to, and it has been asked "Is it always the same kind of yew that has been given?" Linnæus enumerates four species of *Taxus*. The plant being more energetic in a half-dried state than when fresh, has been attributed to its being less disagreeable to the taste; animals, therefore, will eat more of it. Again, it is stated to be more active in the summer than in winter. Besides this, in some places it is a common opinion that it is only the berry-bearing yew which is poisonous—the pistilliferous plant, the yew, belonging to the class *Diœcia* of botanists. This opinion may arise from children being often poisoned by eating the seeds, which are invested with a sweet fleshy pericarp, although this, in itself, is perfectly innocuous.

We have recorded these conjectures with the view of eliciting information on the subject.

TESTIMONIAL TO MR. H. CORBY, M.R.C.V.S. AND
DEMONSTRATOR OF ANATOMY IN THE ROYAL VETERINARY
COLLEGE.

[It affords us very great pleasure to insert the following. The testimonial was richly emblazoned on vellum, and to it the signatures of all the pupils of the College were attached. Thus so early to receive a proof of the estimation in which he was held by those he had taught, must have been very gratifying to Mr. Corby, and it will doubtlessly operate as a stimulus to renewed exertions on his part in after life.]

The testimonial was presented at the close of the past session.

“ROYAL VETERINARY COLLEGE.

A TESTIMONIAL TO

HENRY CORBY, ESQ.,

DEMONSTRATOR OF ANATOMY, &c., &c., &c.

SIR,—In the sincerity of our hearts, we, the undersigned, students of the Royal Veterinary College, entreat your acceptance of this Testimonial, as a token of our esteem and how highly your unvaried kindness and abilities are appreciated by us.

Be assured, sir, your earnest and unceasing endeavours to impart to us a true knowledge of that important branch of our studies in which it is your particular province to instruct us, has occasioned within our breasts that noblest of all sentiments—gratitude—which cannot ever be effaced.

Our most fervent wish is that you may long live in health and prosperity, fully to enjoy every blessing this world can afford, and to believe us, sir,

Your obliged and faithful pupils.”

LONDON—SESSION 1858-9.

WEST OF SCOTLAND VETERINARY MEDICAL ASSOCIATION.

THE fourth General Meeting of the *West of Scotland Veterinary Medical Association* was held in the Tontine Hotel, Irongate, on May 20th, 1859, Mr. W. ANDERSON, President of the Society, in the Chair.

PRESENT:—Professor Dick, Messrs. W. Anderson, J. Anderson, A. Robinson, J. Steel, J. Mitchell, W. Cockburn, A. Dunlop, M. Pottie, — Marshall, J. M'Kirdy, — Dickie, — Lang, and C. Moir.

The Secretary read an apologetic note from Mr. M'Call, and after the reading of the minutes of the former meeting, the Chairman stated that, according to the rules of the Society, all business was to be transacted before any discussion took place, but as the hour was yet rather early, and more of the members were expected to be present, he thought

that it would be desirable for Professor Dick to offer a few remarks on 'Soundness and Unsoundness,' and leave the transaction of the general business to the end of the meeting. This being agreed to,

The Professor said that he had no paper prepared on the subject, but he would take the cases discussed at the two previous meetings of the association for his text. In the first place, he observed, we should, when examining horses for soundness, be always guided by the law of the land. He then asked, What is a sound horse? Is a horse sound that is capable of performing his ordinary work? He may be able to do this with a curb or a spavin; or even a blind horse may be able to do it, or a horse having a splint, which, from its size and position or seat, many would consider sound. Still, in the abstract, it is a wrong opinion. Any alteration in the natural structures constitutes unsoundness, and a horse is only sound when there exists no abnormal alteration of any of these structures. But in examining horses we are also to judge from certain appearances, and to give our opinion, saying that it is our professional opinion that the horse will not go lame, say from that splint, or any other inconsiderable enlargement which may exist; neither will it interfere with his action or usefulness. But if you go to law, the case is altogether different. The judge looks not to whether the animal is capable of performing his work or not, but his judgment is regulated by the evidence which shows whether there is any abnormal alteration of structure or not.

Windgalls it has been said are not to be regarded as constituting unsoundness, as they may not produce lameness. Nature throws out an extra effusion of synovia to lubricate the parts and prevent lameness, and, consequently, unsoundness; and unless the bursæ be distended to that extent which shows that there is some degree of friction going on within the joint, the horse is to be considered as sound.

With regard to the other cases which had been noticed, he could only repeat what he had said before, which was to the effect that the opinion given of any defects observed at the time of examination must depend as to whether they were likely to prove injurious to the animal or not.

The President proposed a vote of thanks to the professor, for his kindness in coming from Edinburgh to attend the meeting, and said the only way in which they could recompense him was to elect him an honorary member of the society, which was unanimously agreed to. The Professor thanked the members for the honour they had done

him, and expressed a hope that the society would succeed in the objects for which it was formed.

The President then stated that as the present office bearers had been acting for the last twelve months, the members of the society should proceed to elect others to fill the places of those who were now retiring. He also hoped that their successors would receive the same kind support during the time of their holding office as had been given to their predecessors.

The following gentlemen were then elected:

Mr. Cockburn, *President*.

Mr. Steel, Mr. Dunlop, and Mr. M'Kirdy, *Vice-presidents*.

Messrs. Robinson, W. Anderson, J. Anderson, Lang, M'Dougal, J. Mitchell, Sharpe, and Howatt, *Members of Committee*.

Mr. Marshall, *Treasurer*.

Mr. C. Moir, *Hon. Secretary*.

Veterinary Jurisprudence.

ROOSE AND DUGLEDDY PETTY SESSIONS.

SATURDAY, *October 23d*, 1858.

(*Before* W. OWEN, Esq., JAMES HIGGON, Esq., Dr. ROWE, and the
Rev. JAMES PHILLIPS.

CHARGE OF POISONING DOGS WITH STRYCHNINE.

Thomas Edwards, gamekeeper at Preskilly, was charged with poisoning with trychnine a setter bitch, value £5, the property of J. A. Peel, Esq., of Stonehall.

Defendant pleaded not guilty.

Mr. J. Eaton Evans appeared for the prosecution, and Mr. William Stevenson Owen, barrister-at-law, instructed by Messrs. Rees and Davies appeared for the defendant.

J. A. Peel, examined by Mr. Evans—I reside at Stonehall, in this county. I recollect on Saturday morning, the 2d of October last, my servant (George Roberts) coming to me early in the morning. It was about half-past seven. He asked me to get up directly, that two of my setters were dead. From something that I heard I was induced to go to the kennel, and there I found my three setters dead. There was a black and white one amongst the rest. I think she had died just before, because she was warm when I went there. She was on her bowels, and her forelegs stretched forward, as if she had died in great pain. She exhibited the appearance of being convulsed. There were other dogs in the kennel. I removed the live dogs out of the kennel. I did not remove the dead ones out at that time. I brought the black and white dog to Haverfordwest on that same day. I delivered it myself to

Mr. James, the veterinary surgeon. I was present when the operation took place by Mr. James. The black and white bitch "Bell" was out sporting with me on the 1st of October. There was also one other bitch out with me on that day, a brown and white bitch.

Mr. W. S. Owen—Was that one of the dogs that is dead?

Witness—Yes.

Examination continued—That dog is dead too. Only those two dogs I had out with me that day. There were a red bitch and two puppies in the kennel besides the ones that were dead. I value the black and white bitch at £5. I would not have sold her for less than £5.

Clerk—Do you know the age of the black and white bitch?

Witness—No.

Cross-examined by Mr. W. S. Owen—When I examined the black and white bitch she was warm. She might have been dead half an hour.

James Davies examined by Mr. J. E. Evans—I live at Stonehall. I am ploughman with Mr. Peel. I know Thomas Edwards, the defendant in this case. I recollect seeing him on Friday, October 1st. I was in the saddle-room at Stonehall. When I was there I heard some one pass. I opened the window and saw the defendant. He asked me the way into the saddle-room. I told him he must go round to the stable door. He then went towards the shed. I told him that he could not go that way. He asked me to come and open the stable door, and I did so. He then came into the stable. He (the defendant) said to me, "Is it you are here, I thought it was Roberts was here; I wanted to speak a few words to him." He stayed in the stable for about five minutes.

Clerk—What time was this?

Witness—About half-past seven in the evening.

Examination continued—He asked me to light him out of the stable. He said to me, "Put out the light, for fear Mr. Peel will see me." I put out the light in the stable and shut the door. Defendant then asked me where the dogs were keeping. I told him where Mr. Jones's old ashpit was. I meant by Mr. Jones the gentleman who used to live there. He asked me how Mr. Peel pulled down the old kennel. I told him that I didn't know. He said that he was looking at the old kennel as he was coming, and it was all down flat. Defendant then asked me to come and show him the dogs. I went to the kennel and showed the dogs to him. The kennel is about thirty yards from the stable. The kennel lies between the kitchen and the stable. It is also about thirty yards from the kitchen door. I and defendant went to the kennel. There were six litters there. There was a black and white bitch amongst them. I saw the defendant give something to "Bell." That was the black and white bitch. I said to the defendant, "The dogs are very familiar with you." He said "Yes they are, because they can smell game about me." We both went out of the kennel then. He (the defendant) said to me, "Mind you don't tell anybody about my being here, because Mr. Peel and Mr. Harries of Preskilly are not friendly." Mr. Harries is the defendant's master. I told him to never mind that. He told me again mind not tell anybody, because some harm may come to him (defendant). Then he left. Nothing else occurred that night. I went to the kennel the next morning a little after seven o'clock and I saw two of the setters dead, and another dying. "Bell" was not dead at that time, but she was dying. "Bell" was the one that I saw the defendant (Edwards) giving something to. I fed the dogs the night before. It was before the defendant saw them. I gave them barley

meal and greaves. When the defendant and I went to the kennel there were six dogs there. The red bitch did not come out to Edwards, as she was shy, but the puppies did. The red bitch was not one of the ones that died.

Cross-examined by Mr. W. S. Owen—When I first saw the defendant that evening I don't remember him asking me for a light. I can't swear that he did not ask me. I did not give him a light through the window. I told him that a new kennel had been built, and he proposed to go and see it. I saw him give something to "Bell." It appeared to me white like bread. I did not see him give anything to the other dogs. I told Ann Evans of Stonehall that I only saw him give something to one dog. I have said so to many persons. The defendant remained in the kennel for about five minutes. There were two of the bitches close to his side. I could not have seen if he had given something to the other two. He did not fondle "Bell" before he gave her something. He was fondling the brown and the brown and white bitches. They are two of the dead dogs. The name of the brown and white bitch was "Sapphire," and the name of the brown one was "Beauty." "Bell" is the name of the black and white bitch. The defendant and myself were standing close to each other when we were in the kennel. We were about half a foot from each other. The defendant said, "Don't tell Mr. Peel that I was here, because Mr. Peel and Mr. Harries are not friends." About five o'clock that afternoon I fed the dogs.

By the Bench—Did you feed them with the same food as usual?

Witness—Yes.

By the Clerk—I saw the defendant going out. I went to the stable door with him.

By the Bench—When I went to the kennel in the morning the dying dog appeared to be in great pain. I did not visit the kennel that night after the defendant left.

By the Clerk—She was twisting herself. I did not notice her eyes or mouth. I did not notice anything about her mouth after she was dead.

D. E. James—examined by Mr. Evans, I am a veterinary surgeon practising in this town. I am properly qualified as a veterinary surgeon. I know Mr. Peel of Stonehall. On the 2d of October last I recollect Mr. Peel bringing me three bitches—they were brown, white and brown, and black and white. I made a *post-mortem* examination of the black and white one. The muscles were soft and pliable at the time. I noticed the stomach—it was slightly congested, and nearly full. I also noticed the lungs—they were congested. The heart was nearly full of black blood. The blood was in a fluid state. The body was in a healthy state. On the Saturday I did nothing more than open the bitch. I put the viscera in a cloth and locked them up. I did nothing more until the following Monday. On the Monday I opened the stomach of the black and white bitch in the presence of Mr. Peel and Mr. Phillips the druggist. The stomach was nearly full of meal and grain, and one piece of substance like a lump of fat. It was about one inch and a half long and one inch wide. It appeared to be in a fresh state. I should think it had not been swallowed long before death, as it had not been digested. I found nothing like it in the other contents of the stomach. I came to the conclusion that they had been poisoned. I put the whole of the contents of the stomach in a glass bottle (such as used for medicine), and locked it up. I did nothing more until the following Tuesday evening. I took it up to Mr. Brown the surgeon. Mr. Brown had promised to assist me in analysing it. We did nothing with

it that evening, as Mr. Brown was engaged. I left it with Mr. Rees. On Wednesday Mr. Brown and myself analysed the contents. We did not complete the investigation on that day. We finished on the following Friday. The result of our investigation was that we suspected strychnine had been the cause of their death. When we commenced we found nothing. On Friday morning we discovered strychnine. We administered what we supposed to be strychnine to two cats and one rabbit. The cats showed the usual symptoms of being poisoned by strychnine. One of the cats was an old one and the other young. The old cat was the worst. We presented some to a rabbit, but it was a smaller quantity. It had the same effect on the rabbit as on the cats. The poison began to act on the old cat about ten minutes after it had been administered to her. She was from twenty minutes to half an hour before she died. The young cat was about half an hour before she showed any symptoms of it. In my opinion the black and white bitch died from strychnine. I have no doubt at all about it.

Cross-examined by Mr. W. S. Owen—The fat I speak of might have been greaves. I can't say what quantity of strychnine had been given. I believe poison is found in the liver. I never examined a dog that had been poisoned by strychnine before. I have never seen a case of poisoning by strychnine. I believe the strychnine was in large quantities. I cannot tell how much strychnine was found in the dog.

Wm. Rees deposed—I am an assistant to Dr. Brown, practising in this town. I know the last witness. He delivered something over to me on the 4th of this month in the surgery. He delivered to me four bottles. I put them in a cupboard, locked them up, and kept the key. I gave them to Mr. Brown when he came home. I kept them for four days. I was assisting in the analysis.

J. D. Brown examined—I am a surgeon and a Fellow of the Royal Society of Surgeons, and practise in this town. I have had a great deal of experience of the effects of strychnine. I did, in conjunction with Mr. James and the last witness, examine the contents of four bottles which were handed to me by Mr. Rees. Mr. James assisted me in the examination. The bottles were delivered to me by my assistant. We began to examine on Wednesday evening. In the course of our examination we found strychnine.

(*Mr. Owen* here admitted that the dog died of poison).

Cross-examined by Mr. W. S. Owen—I believe the strychnine was in great quantities. The solution we had was very strong. Strychnine leaves no symptoms in the coats of the stomach.

Re-examined by Mr. Evans—If the strychnine had been administered in crystal it would not kill so soon as if it was solution. It would have acted very much sooner if the stomach had been empty. I have seen it act in ten minutes.

Cross-examination resumed—I have an opinion that the strychnine was administered in large quantities. I have sufficient now in the surgery to kill six dogs. The rabbit was not killed, but was convulsed for about twelve hours. It commenced about eleven o'clock in the forenoon, and lasted until twelve o'clock that night. I made particular investigation of the piece of fat. Strychnine is used to poison vermin. Judging by the little that killed the two cats I believe it was administered in large quantities. I believe that one grain of strychnine, if it gets into the blood, would kill in two hours. I don't know that it would be more rapid with animals than with people. I made no other examination than the stomach. There was sufficient strychnine found to kill suddenly. The piece of fat might have been greaves. I did not see any bread in the stomach.

By the Bench—The stomachs of two dogs were a little reddish. The stomach of the other was perfectly white.

This concluded the evidence for the prosecution, and Mr. W. S. Owen addressed the Magistrates at some length on behalf of the defendant, and called

Ann Evans, who deposed—I am the wife of James Evans, and live near Stonehall. I recollect being at Newton sale on the 1st of October instant. My brother (the defendant) was also at the sale. He called at my house that night on his return home. I gave him some cakes to take home to the children, and he put them into his pocket. I gave him three cakes. I heard the next day that the defendant had poisoned some dogs. James Davies told me about it. He said that the defendant gave a piece of cake to one dog, but he did not give anything to the other two; and that the dog he gave a piece of cake to was alive in the morning, but died afterwards.

Cross-examined by Mr. Evans—I am sister to the defendant Thomas Edwards.

Thomas Morgan examined—I know James Davies. He told me that the defendant was in the kennel with him. He said that the defendant gave a bit of something white like bread to the black and white bitch, but he did not see him give anything to the others.

James Evans examined—I live near Stonehall. I recollect the 1st of October last. About ten or eleven o'clock that night I was going to St. Lawrence. I went by Stonehall House. When I was coming back I saw two men coming from the gate towards the kennel. I did not know either of them. I heard one say to the other "They are all right now." I said good night to them, but they gave me no answer. They went towards the road and then ran off.

Cross-examined by Mr. Evans—I am husband of the last witness, and brother-in-law to the defendant.

By the Bench—I don't know who the men were. I was about one yard and a half from them. I don't know that I ever saw the men before. I had been fetching my horse for my wife to go to Haverfordwest on Saturday. It is customary to fetch the horses home the night before. My wife starts from home about five o'clock in the morning. I live about nine miles from Haverfordwest. It takes my wife about two hours and a half to come to Haverfordwest on horseback.

The Magistrates retired for about five or ten minutes, and afterwards returned into the Court with the following verdict—That in the opinion of the Magistrates the defendant was morally guilty, but they regretted that the legal evidence was not sufficient to convict him.

[There were two other charges of the same sort against the defendant, but the decision in this case was to rule the others.]

Mr. W. S. Owen applied for a certificate to prevent further proceedings being taken against the defendant, which the Magistrates refused to grant.

[Wm. Owen, Esq., did not take part in the proceedings in this case.]

OBITUARY.

Died, on the 9th May, 1859, aged 44, John Humphreys Lane, M.R.C.V.S., of Cirencester. Mr. Lane was appointed to the Turkish Contingent Force during the Crimean war, and was much respected as a professional man. His diploma bears date May 18th, 1849.

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Communications and Cases.

PAROTIDITIS IN A CALF.—THE SOLE OF A
SHOE FIXED ON THE MOLARS OF A COW.—
LARVA OF THE GAD-FLY UNDER THE SKIN
OF THE NECK OF A HORSE.

By J. HAWTHORN, M.R.C.V.S., Kettering.

THE following cases are such as any veterinary surgeon, having a general practice, will frequently meet with; and being easily managed, they bring him not only a fair profit, but also tend to raise him in the estimation of his employer; while in the hands of an unqualified person they are often sadly mismanaged, and that sometimes to the great loss of the owners of animals.

I examined a thorough-bred Durham calf, having a swollen parotid gland. On opening it, a quantity of laudable pus escaped. Its interior, after the evacuation of the abscess and when cleansed, I observed to be covered with hair, and spotted brown and white, like the body of the calf. The opening healed very rapidly, and thus all fear of any unpleasant consequences were removed.

It is probable that something had pressed upon the part when the young animal was in the uterus; possibly the feet of the calf itself.

Every vestige of the swelling had disappeared in a few days.

A cow was observed to be falling off rapidly in milk, flesh, and appetite. On examining the mouth, I found the sole of a shoe fixed along the top of the lower molars, the projections of the teeth having pierced through the leather in

several places, thus holding it fast. When the sole was removed, the animal soon again did well.

I was requested to see a horse, reported to have a large and dangerous swelling on his neck, which extended to the front of his chest and along the belly.

I soon found it was owing to the existence of the larva of one of the *Æstri*, which had been deposited in the cellular tissue of the neck, under the mane. The parasite seemed ready to emerge, but the dry scab resisted its escape for several days. When pressed round the edge, the larva was forced out, and with it much purulent matter. A free use of fomentations, with the exhibition of a laxative, was all that was required, to the great satisfaction of the owner of the animal, who was afraid his horse had contracted a formidable malady.

LITHOTOMY IN THE HORSE.

By D. SAYER, M.R.C.V.S., Norwich.

THE horse operated upon by me was the property of H. Ling, Esq., of this city. He was about seven years old, fifteen hands high, strongly built, a good hack, hunter, and harness horse, and had been in the above gentleman's possession a short time only.

Soon after purchase the animal presented symptoms of "something being wrong" in the urinary organs. He frequently attempted to stale, and the act was accompanied with great difficulty, the urine being voided in small quantities only, and sometimes tinged with blood. He was admitted into my infirmary on the 28th of February, 1859, presenting symptoms of the existence of calculus in the bladder; and a short time after his admission, on a careful examination being made, my suspicions were confirmed. The tests suggested by Professor Spooner, both chemical and microscopical, being applied, fully proved the presence of carbonate of lime in the urine. I at once communicated my opinion to the owner of the existence of a calculus, and advised an operation for its removal. This was immediately concurred in by him, but the animal not being in a fit condition to be operated upon, a postponement was deemed advisable. Proper measures being adopted for that purpose, he was thought fit for the operation on March 14th.

The horse being cast in the usual manner, the hind legs were brought well forward by the collar-rope used in castrating. A sponge, partly covered with oil-silk, and saturated with chloroform, was applied to each nostril, and in eight minutes he was completely under its influence. The sponge was now removed from one nostril, and the anæsthetic influence kept up by ether.

Assisted by my friend Mr. J. M. Riches, V.S., Acle, a whalebone staff was passed up the urethra in the usual manner, and cut down upon in the perinæum. A pair of spoonbill forceps was then introduced, and the calculus firmly grasped, but in extracting it it was partially crushed. A second introduction, however, of the forceps, withdrew the remainder; the bladder was then washed out with tepid water, and one suture applied to the wound in the perinæum.

The blood lost was inconsiderable.

The horse was then let up, and the time occupied from first using the chloroform to the end of the operation was found to have been twenty-five minutes.

The weight of the calculus was over three ounces.

The patient was now taken to his box, and in about an hour after he staled, the urine coming through the wound and natural passage.

On the 15th the suture was removed, and the wound cleansed with tepid water. The animal still urinated partly through the wound and partly by the natural passage.

The same treatment was pursued till the wound finally closed, which was on the 20th of March. He left my establishment on the 29th, was ridden by his owner on the following day, and remains in his possession up to the present time, being constantly ridden and driven by him.

POISONING OF CALVES WITH THE RHODODENDRON HYBRIDUM.

By B. KETTLE, M.R.C.V.S., Market Drayton.

CONCEIVING that the following cases of poisoning of calves with the *Rhododendron hybridum*—from their novelty—may have some features of interest for the profession, I beg to place them at your service.

Early in the morning of January 8th, 1858, I was re-

quested by the Misses Goodall, of Dorrington, six miles from here, to see as quickly as I could nine strong yearling calves, some of which would be dead—it was feared—before I could reach them.

After my arrival at Dorrington, on inquiry I learned that some time during the preceding night the animals had broken into a flower-garden, and eaten freely of the rhododendrons, which grew abundantly there.

They were all under the influence of this—shall I call it narcotic?—shrub; but as the symptoms differed in intensity, owing, I apprehend, to the difference in the quantity partaken of, I shall select three of the most aggravated cases for description.

Symptoms.—Pulse below the natural standard, steady, and tolerably full; breathing slower than usual; visible mucous membranes somewhat pallid; nose dry; skin warm; eyes dull, and the lids half closed; bowels costive; a continuous and most painful grinding of the teeth; frequent vomiting* of saliva, mingled with considerable quantities of the leaves and buds of the rhododendron. They likewise manifested great disinclination to move, and when made to do so, staggered about in such a manner as to shock the nerves of the disciples of Father Matthew! They would reel a few paces, then rush forward with their legs widely extended and in an eccentric way, and suddenly fall.

Treatment.—At the urgent entreaty of the owners, I bled two of them, abstracting a pint of blood from each. More, I conceived, could not have been taken with impunity. I gave—

Sulph. Mag., ℥viiij, et Ol. Crotoni Tigl., ℥xx,

(the only medicine I had with me) in Aqua, to each. This was followed, in half an hour, by $\frac{1}{4}$ pint of gin, given in a pint of warm gruel, and ordered to be repeated at intervals of two or three hours. Vomiting being produced both by the medicine and the gruel, cold gruel was given.

January 9th, 10 a.m.—There is much improvement. The pulse and breathing are more natural; cessation of vomiting; eyes brighter; but the staggering continues, although in a less degree; and the bowels are still constipated. Give—

Ol. Ricini, ℥x;
Ol. Crotoni Tigl., ℥xx.

* In using the word vomiting, in reference to *ruminants*, I know it is liable to be cavilled at, as many employ the term *regurgitation* in describing this action. Still I opine vomiting is the correct term, when matter from the stomach is thrown *beyond* the mouth. The one is an involuntary, and the other a voluntary act.—B. K.

To be repeated in the evening, if necessary. Stimulate the whole course of the spine with mustard and Ol. Canth., and give every three hours Ammon. Carb., ʒij, in cold gruel.

10th, 9 a.m.—The animals to-day are all better. The oil had to be repeated. The alvine evacuations are now copious; the staggering has nearly disappeared; and they manifest an inclination for food.

℞ Pulv. Gent. Rad., ʒss;
Pulv. Capsici, gr. xx;
Ammon. Carb., ʒij, in bolus.
Mane et nocte.

And let them be returned slowly to their usual diet.

The whole of the calves recovered, and without being much impaired in their condition, within four days from the last-mentioned date, under this treatment.

I have the notes of a case of poisoning of a horse with tobacco; which, if thought of sufficient interest for the pages of the *Veterinarian*, I shall have much pleasure in forwarding.

[We need hardly say that all cases illustrative of the action of substances, medicinal or others, salutary or prejudicial, on our domesticated animals, are of interest to us. We therefore thank Mr. Kettle for his offer, which we gladly accept.]

TYPHUS FEVER IN THE HORSE.

By G. LONGMAN, M.R.C.V.S., V.S. Royal Artillery.

I AM induced to send you for insertion in the *Veterinarian*, an account of three cases of the above disease occurring among the horses of "I" Battery, Royal Horse Artillery, whilst stationed at Norwich Barracks; because I believe typhus fever to be an uncommon disease in the horse, and so rarely seen, as not to be mentioned by some veterinary writers. I, therefore, trust it may be of sufficient interest to merit a place in your valuable journal.

These cases were preceded by an outbreak of influenza, early in January last, among the remount and young horses of the above battery, to several of which it proved fatal. The disease was characterised by low fever, a quick, weak pulse, cough, general prostration, and more or less derangement of the respiratory organs. In all these cases the lungs or their

appendages were mostly affected; the other organs and tissues of the body being only functionally or sympathetically deranged. But in the following cases there were no leading symptoms, or the indication of any particular organ of the body being more the seat of disease than another.

I availed myself of the assistance of a brother-practitioner in the city, Mr. W. Smith, M.R.C.V.S., to whom I am indebted for many valuable hints, and on whose practical knowledge and great experience I have much relied in the treatment of these cases, and who, during my absence on leave, attended in the early stages of the first case, and pointed out to me on my return the strongly marked symptoms of typhus fever which it presented, and I must confess that I never saw or read of a similar case.

CASE 1.—A bay mare, five years old, in very good condition, had joined the "Battery" in May, 1858, and had never been on the sick-report. She became unwell February 25th, 1859, and exhibited the following symptoms: pulse 65, mouth dry and hot, tongue furred, mucous membranes injected, total loss of appetite, breath and excretions from skin and bowels very fetid, fæces hard and of a dark colour.

Treatment.—A mild stimulant was applied over the chest, as the breathing was slightly disturbed, being 12 per minute. She was placed in a cool loose box, and had administered to her every eight hours, Pulv. Digitalis, Nit. Pot., et Aloes, in small doses. The thirst was intense.

March 1st.—Diarrhœa commenced, which was checked by means of opium, given in half-drachm doses; afterwards the treatment consisted of Amm. Sesquicarb. cum Pulv. Gentianæ, exhibited morning and evening, and plenty of gruel was horned down.

There was a total loss of appetite, but an avidity evinced for water. Pulse 75; breathing normal; mucous membranes of a dark-red colour; breath very fetid; the tongue covered with black matter; great prostration of the vital powers, and bowels irregular, the fæces being very fetid and scanty.

11th.—I now first saw the case. The pulse was 65; breathing quite normal; occasional grating of the teeth present; breath extremely fetid, and the tongue still covered with black matter; mucous membranes were injected; general prostration; the bowels inactive, which were relieved only by means of clysters. I continued the use of the ammonia, morning and evening, giving it in beer, and in combination with vegetable tonics. I also gave gruel, as the mare

had not partaken of any kind of food since she was first attacked.

12th.—She is much the same, having some abdominal pain, and the bowels continue inactive. I gave Tinct. Opii, f ʒj, in Ol. Lini, Oj, which afforded relief. In the evening I ordered—

Hyd. Chlor., ʒj;
Pulv. Gent. et Zingib., āā ʒj, in bolus.

The extreme thirst continues.

13th.—The bowels are relaxed, and the fæces very fetid; pulse 65. Continue the vegetable tonics, and allow plenty of good gruel.

14th.—The bowels still relaxed; pulse 65; the breath not so fetid. Treatment as before ordered. The evacuations are still very offensive, as well as the secretion from the skin.

15th.—Pulse 60. Continue vegetable tonics with Spts. Æther. Nit., given in draught. The thirst continues excessive.

16th.—The mare has partaken of a little hay; pulse 60, and regular; breath not so fetid; mucous membranes of a more natural hue. Give daily—

Pot. Iod. et Sulph. Ferri, āā gr. xx, cum Pulv. Zing. et Gent., āā ʒj, in ball.

She partakes freely of warm water.

18th.—Pulse 55; appetite improved. The bowels having again become inactive, I gave, in the evening, Ol. Lini., Oss.

19th, 11 a.m.—Pulse 90, with acute abdominal pains; mucous membranes intensely injected; mouth hot; countenance anxious; rigors; bowels again inactive, and total loss of appetite.

Treatment.—Ordered—

Pulv. Opii, ʒj, cum Hyd. Chlor., gr. x, in ball.

Blistered the abdomen, and threw up an enema which brought away some fæcal matter.

3 p.m.—Pulse 75, and abdominal pains not so violent; bowels still inactive.

5 p.m.—Animal much the same; pulse 75. I gave—

Opii, ʒj;
Hyd. Chlor., gr. x, in ball;

following it up with—

Ol. Lini, Oiss;

and ordered an enema.

10 p.m.—Pulse 80, and the animal comatose; bowels still

inactive ; mucous membranes injected. Repeated the Ol. Lini, and directed some gruel to be given to her.

20th, 6 a.m.—Patient much worse : pulse 90, and wiry ; abdominal pains much increased, and the blister has not acted. Ordered—

Pulv. Opii, ʒss ;
Hyd. Chlor., gr. x, in bolus ; et
Ol. Lini, Oiss, in haustus.

11 a.m.—Pulse 100, and the mare is evidently fast sinking. She died in the evening.

Autopsy.—The whole of the viscera were in a more or less gangrenous state. The peritoneum was congested in patches throughout. The mucous membrane of the large intestines was ulcerated, and studded with tubercles of various sizes, filled with granular matter. The mucous membrane of the small intestines and stomach was much thickened. The ingesta was in a fluid state, and there was no impediment to its passage along the intestinal tube. The liver and spleen were also gangrenous. The kidneys were flaccid, and one of them structureless, having entirely lost its form and general appearance. There was diffused inflammation of the pleuræ ; the lungs were congested, and the mucous lining of the trachea and bronchial tubes was gangrenous. The heart was of a very light colour, soft, and easily broken up. The tissues of the body generally were light in colour, very soft, emitted a disagreeable odour, and showed a disposition to run into rapid decomposition. I did not examine the brain.

CASE 2.—March 23d, 1859.—A brown mare, five years old, in very full (fat) condition. She had been attacked with farcy in the autumn of 1858, and had also been the subject of influenza. She now showed the following symptoms : breathing disturbed ; pulse 65 ; the breath very fetid ; great prostration ; mucous membranes slightly injected ; tongue furred ; appetite impaired ; fæces of a dark colour, hard and offensive.

Treatment.—I had her placed in a loose box, applied a blister to the chest, and gave every eight hours—

Pulv. Digitalis et Aloës, āā ʒj ;
Pot. Nit., ʒij, in ball.

24th.—Pulse 70, and weak ; breathing more tranquil ; cough painful ; mucous membranes of a yellow tinge ; bowels constipated. I discontinued the aloes, and gave—

Digitalis, ʒj ;
Hyd. Chlor., gr x ;
Pot. Nit., ʒj, in ball.

every six hours. She partakes of a little grass, and drinks freely of warm water.

25th.—Pulse 55; fæces of a more healthy character, but somewhat fetid; discharge of mucus from the nose; mucous membranes still yellow. The blister has caused some irritation. Continue the medicine as before ordered, and steam the nostrils.

26th.—Pulse 60; breathing disturbed; total loss of appetite; grating of the teeth; excretions fetid; the tongue dry, slightly furred. The bowels being slightly relaxed, omit the calomel. The animal drinks very freely of thin white water.

27.—Pulse 80, and thready; mucous membranes of a dark hue; the breath fetid; extremities cold; general prostration; thirst intense. Gave Amm. Sesquicarb., ʒij, in ball. There was a total loss of appetite, and the evacuations were scanty. I repeated the Amm. Sesquicarb. in drachm doses every five hours, and applied a sinapism along the abdomen. She takes her rest, remaining quiet when down, and does not show any pain. In the evening the pulse had risen to 90, and diuresis commenced, which, however, subsided in a few hours. Discontinue medicine.

28th.—Pulse 95, and thready; breathing still slightly disturbed; mucous membranes of an unhealthy appearance; bowels more regular. She now stands stupidly still, and appears not to notice anything. Intense thirst is present. Give, every eight hours—

Quinæ Disulphas, ʒss;
Pulv. Gent. et Zing., āā ʒj, in ball.

29th.—Pulse 100; animal comatose. I gave Amm. Sesquicarb., ʒij, which roused the vital powers, but she still remained quite still, except that occasionally she would paw the litter. Repeat the quinine.

30th.—Diarrhœaset in, and the mare expired during the day. *Post-mortem appearances.*—The peritoneum covering the large intestines was congested in patches. The mucous membrane of the large intestines was gangrenous, and studded with tubercles, which contained gritty matter. Some of these had caused ulceration, but not to the same extent as in the preceding case. The mucous membrane of the stomach and small intestines appeared healthy. The ingesta throughout was fluid; the spleen very large and congested; the liver of a dark greenish hue, and studded with tubercles. On opening the chest there was found a little sero-sanguineous fluid. The pleuræ were congested in patches. The lungs were also

congested, and their anterior parts studded with tubercles, some of them being apparently of long standing. The heart was of a very pale colour. This mare, as well as the preceding one, had large deposits of fat in the abdomen.

CASE 3.—A bay gelding, five years old, in full condition, was taken ill March 28th, with typhus fever, accompanied with indications of pneumonia. I saw the animal about midday, when I found the pulse 60, and rather oppressed and small; the breathing disturbed; mouth dry, and breath emitting a disagreeable odour; mucous membranes rather pale; fæces hard and dry. I ordered Spt. Æth. Nit., f ʒss, in draught. In the evening the pulse was fuller, and the breathing still disturbed. I had a blister applied to the chest, and gave every six hours Pulv. Digitalis et Aloës, ana ʒj; Pot. Nit., ʒj, in ball; and allowed mash diet, of which he partook sparingly.

March 29th.—Patient much the same. Repeat the blister, and continue the medicine as before ordered.

30th.—Pulse 70, and weak; mouth dry; breath fetid; respiration about 20; evacuations regular; fæces pul-taceous. The blister has not caused the slightest irritation. I applied mustard over the chest, and continued the medicine.

At 5 p. m., the pulse was 80; breathing, 10 in the minute; mouth dry; no action from the blisters; extremities cold; mucous membranes very much injected; total loss of appetite, with a peculiar fætor from the body. Ordered, every four hours, Amm. Sesquicarb., ʒj, cum Camph., ʒj, in ball, and applied croton oil to the chest.

31st.—A considerable swelling exists on the chest, but none on the sides; pulse 80, and weak; mucous membranes injected; extremities warm; the animal has a most dejected appearance, and evinces great thirst. Continue the medicine as before ordered.

12 o'clock.—Pulse 75, and intermittent. Omit medicine; allow food of every description. The animal partakes of a little grass, and drinks large quantities of water.

April 1st.—Pulse 72; breathing quite tranquil; appetite still impaired; fæces hard, and covered with mucus; a very fetid exhalation arises from the breath and skin; he often grates his teeth, but seems free from pain. Give, morning and evening, Amm. Sesquicarb. et Gent. Pulv., ana ʒj; and at midday, Spt. Æth. Nit., f ʒj, in Cerevisiæ, Oj.

2d.—Pulse 66, still intermittent and weak; thirst not so great. Treatment the same as yesterday.

3d.—Pulse 60, with more tone; fæces black, soft, and covered with mucus. Continue the same treatment.

4th.—Pulse 75; entire loss of appetite; frequent grating of the teeth; bowels relaxed, and fæces very fetid. He partakes of dry food sparingly, but drinks freely.

5th.—Pulse 75; and otherwise the animal is much the same. Bowels continue relaxed.

The Principal Veterinary Surgeon to the Army, Mr. Wilkinson, saw the horse to-day, and recommended Ol. Tereb., f ʒj, in haustus, bis in die. It produced profuse diuresis with much irritation, and I feared my patient would sink under its influence.

6th.—Pulse 75, and weak; the mouth is moister; the mucous membranes of a more healthy hue; appetite improved. Allowed grass, &c., of which the animal partakes sparingly. Discontinue medicine.

7th.—Appetite improved; pulse 66, but weak; fæces soft and not so fetid, but mingled with pus and mucus.

13th.—Pulse 58, and fuller; appetite improved. Several abscesses have formed on the side, behind the shoulder, each containing about two fluid ounces of pus. There is still some pus and mucus mingled with the fæces.

23d.—Pulse 50, and full; appetite good; and small abscesses continue to form on the near side. Vary the diet.

May 3d.—There is no appearance of any more abscesses forming.

10th.—Animal convalescent.

June 1st.—This horse is doing well, and is only kept from his work through the blister on the chest having been rubbed, and which has not yet healed.

MALPRESENTATION IN A MARE, FOLLOWED BY INVERSION OF THE UTERUS.

By A. FULLER, M.R.C.V.S., Ramsey.

APRIL 6th, 1859.—About 8 o'clock p.m. my immediate attendance was requested to a valuable brood mare, distant about five miles from this place, which was stated to be about to foal.

On my arrival, I found the mare recumbent and violently straining to labour. I therefore at once proceeded to examine her, and found a malpresentation, the head of the

fœtus being turned back upon the thorax, and the fore legs doubled under. A few minutes sufficed to adjust the fœtus, which was then easily expelled, it being rather small. The pains continued until the placental membranes were detached, when, as the mare appeared only comparatively easy, I administered Pulv. Opii, ʒj, cum Sp. Æth. Nit., ʒiss; and left her with orders to be kept very quiet.

7th.—At 6 o'clock a.m. a messenger arrived, informing me, to use his own words, that the mare's womb was down. I hastened to her, and found upon inquiry that the owner, whilst looking at her about two hours after my departure, saw something protruding from the vagina. I have but little doubt, therefore, that the uterus became inverted shortly afterwards, as it was found so when the horseman saw her about 4 o'clock a.m. The owner, seeing the deplorable condition the mare was in, wished to have her at once destroyed, but thinking there was a chance of recovery, I informed him so, and was requested to do what I thought best.

From the extreme size and highly congested state of the uterus, I found I should not be able to sustain its great weight alone; I therefore, after having carefully cleansed it with tepid water, procured a large cloth, in which it was kept suspended by two men. I was thus enabled, by continuous manipulation, partly to return it, and by applying my hand to its fundus with some force, it passed into its proper position. I was careful to allow my hand to remain until I felt the circulation was partially restored. To secure it in its position, I passed two sutures through the vulva, and placed a large pad of cloth over it, which was retained there by two cords running from a collar, which were then crossed under the tail, inside the thighs and back to the bottom part of the collar.

The mare was then so placed that her fore parts were much lower than the hinder ones, and I exhibited in the form of draught—

Pulv. Opii, ʒss;
Spt. Æth. Nit., ʒij;
Ol. Lini, ʒxij. Misce.

I left orders for her to be kept very quiet, and not allowed to lie down. Some warm water and flax-seed mash were to be offered to her.

In consequence of my attendance being required to another case of parturition, a long distance off, where I was detained some hours, I was unable to see my patient until about 10 o'clock p.m., when I found her very quiet, she having shown no signs of pain during the day. The pulse

was 80 in the minute and strong; the respiration slightly accelerated; warmth of extremities variable; mouth hot and dry; conjunctival membrane congested. Ordered the draught to be repeated, and Pulv. Opii, ʒj, et Pot. Nit., ʒij, to be given every six hours. Continue the flax-seed mashes.

8th.—I found my patient very quiet, but occasionally she strained and voided a small quantity of thick, highly coloured urine. The symptoms otherwise were but little altered from those present on the previous evening. Continue to give the Pulv. Opii et Pot. Nit.

9th.—The mare is improving. Warmth of extremities more natural; pulse lower; appetite returning. The same treatment to be continued.

10th.—This morning I met the owner, who informed me he entertained no hopes of the mare's recovery, as she appeared much worse. On my arrival, I found her very uneasy, frequently shifting her position, and still voiding small quantities of highly coloured urine. The eyes appear almost amaurotic; she continually grates her teeth; the extremities are again cold, and the pulse 70 in the minute; bowels natural, and mouth not offensive. Still continue the same treatment.

11th.—This morning there is a decided improvement. The pulse is much lower; the extremities are warm; the pain has quite left her; and the appetite is much improved. I ordered some corn to be given her with the mashes, discontinued the opium, and gave vegetable tonics with fever medicine twice a day.

12th.—Animal still improving. Remove the sutures, and let her be turned into a loose box.

13th.—So much improvement has taken place, that I consider my attendance is no longer required. I have therefore requested the medicine to be continued for a short time longer, and care to be observed as to her food, &c.

My attendance being required to another case at the same place, some time after this, I saw the mare, when she appeared to be in a state of perfect health.

I do not know if there is anything particular in this case, but it is seldom mares recover from inversion of the uterus after so long a time has been allowed to elapse before it is returned. I think it must have been down at least six hours.

A SEROUS TUMOUR ON THE EPIGLOTTIS OF A FOAL.

By T. R. SCRUBY, M.R.C.V.S., Royston.

DEAR SIR,—Accompanying you will receive a tongue, rather roughly dissected out I fear, which I this morning took from a foal two days old. I found the tumour, which is just anterior to the epiglottis, as large as a good-sized walnut, it being distended with fluid of a sero-albuminoid character. I punctured it to satisfy the curiosity of the owner. The trachea and bronchial tubes were also filled with a frothy sort of mucus, which I thought arose from the passing of the milk into them, the epiglottis not being pressed over the opening into the larynx.

I should be glad if you can give me any insight into the treatment of such a case, should another similar one occur, and also to tell me if my conclusion is correct; for although my attendance at the College is now completed, yet I shall always consider myself very much indebted to you, and also dependent on all the professors for their very able assistance and advice in matters of intricacy, respecting which my employers may not be satisfied with my own opinion.

To Professor VARNELL.

DESCRIPTION OF THE ABOVE CYST.

By Professor VARNELL.

THE above congenital abnormality consists of a serous cyst, situated upon the left anterior portion of the epiglottis, and is highly interesting as well as instructive, for I am not aware that a similar case has been recorded in any work in the English language, on Veterinary Medicine. In the 'Veterinary Record,' vol. vi, p. 28, a case is described of a serous cyst being situated under the mucous membrane, at the anterior part of the epiglottis, which was thought to have been the result of influenza, its formation admitting of this explanation. We also were of opinion that if it had been correctly diagnosed, relief might have been afforded by a surgical operation. But in this case, even if any difficulty of breathing during deglutition had been observed, it is hardly probable that the mind would have been led to the conclu-

sion that such an abnormity, as was found to exist, was the impediment. And if the idea accidentally had presented itself that such might have been the case, it would even then have been found difficult, in so young an animal, with its small, elongated head, to have determined whether an operation ought to be attempted or not. In my opinion it would have been impracticable.

The tumour was as large as a pigeon's egg, and from its connexion to the epiglottis, it had so fixed that organ as to prevent its closing the glottis when either fluids or solids were passing from the mouth to the pharynx. And it is very probable, that from this cause the milk, when the little animal was sucking, found its way into the trachea, instead of proceeding along its proper channel, and this, as suggested by Mr. Scruby, became the cause of the death of the foal.

PERFORATION OF THE COLON.

By A. J. OWLES, V.S. Carabineers, Muttra.

HAVING had two fatal cases of perforation of the colon lately, one from the effects of chronic, or subacute inflammation of the mucous coat of the large intestines, and the other after frequent attacks of "gripes," during the last four months, mysterious from their frequency and absence of any apparent cause, I have written a short account of them for the benefit of the profession. Moreover, cases of this nature are not easy to diagnose, and if such were more frequent, and presented symptoms equally obscure and unsatisfactory as I found in the first of the two cases I am about to describe, I think the readers of the *Veterinarian* would not blame me for giving a short account of them. I see that Mr. Dyer, in the January number of the *Veterinarian*, has described a case of "Spasmodic Colic with Rupture of the Colon;" and as the history of this case corresponds closely with the two I have had, and in which turpentine, by the bye, was *not* given, I fancy such cases may be more common than some of us imagine. Unfortunately my first, and most interesting case, to me—not so to the owner of the horse, who did not appear to see it in the same light—occurred while we were marching, and I did not take any notes. But the general symptoms at first were similar to those in a case of obstruction of the bowels, viz., slow and continued uneasiness; dejected countenance; lying down and getting up; pulse slightly accelerated and a

little hard, but small; no fæces passed. Laxative medicine, with an opiate, was given, and an enema per rectum, which was repeated. The next day the horse was purging slightly, and he appeared easier. We, as well as the patient, had to march the following morning. The abdominal pains varied after this. For a day or two he would appear better, and eat his food, then suddenly the pains would return, when he would lie down, and look round at his flanks. At all times a dejected countenance was present, and the pulse always had an irritable character. He lost flesh, and the breathing was disturbed; the action of the bowels was uncertain, and the fæces were frequently mixed with stringy mucus. The usual remedies were tried, with counter-irritation to the abdomen, and subsequently, on a yellow tinge becoming visible in the mucous membranes, calomel and opium were given, and the right side blistered. This treatment appeared to give relief, and I had great hopes of a perfect recovery up to the morning of his death. The pain seemed to be gone, the appetite was comparatively good, and the fæces were more regular, although the pulse still had a hard, small feel. This apparent improvement continued for five days, when the syce (native groom) reported one morning that his horse would not eat his food. I found on visiting him that he was dying. I had him removed from the camp to the shade of a tree, there to die, which he did in about one hour afterwards, and just nineteen days from his being attacked.

My other patient was a troop-horse, also in camp, and subject to "gripes." But these attacks were relieved by enemas and rubbing the belly, and did not present any peculiarity, except in the frequency of their recurrence. On the 4th instant, at 7 a.m., on my going to the sick-lines, I found this horse suffering from some abdominal pain; and I was informed that he first appeared uneasy about half an hour previously, while at the water, and that he did not drink. The symptoms this morning were unfavorable; the pain acute and continued; he threw himself down violently; the pulse was small and jerking; and I heard a noise in the throat, like imperfect regurgitation, which made me think of *ruptured stomach*. I ordered an enema to be thrown up, and solution of aloes with opium to be given, which he took well; and the belly was hand-rubbed.

On going to see him again, at half-past nine o'clock, I found he had just died, this being two hours and a half after I first saw him, and three hours from the time he was first observed to be ill.

The sun at this time being too hot for a post-mortem

examination, I deferred making one till the evening. On opening the abdomen, I found part of the proper contents of the intestines floating in it. The viscera, generally, were healthy, except the large intestines. The colon was inflamed, the mucous coat throughout, and in places, greatly so, and the submucous tissue infiltrated. In one place all the coats had given way, and there was an opening about the size of a large walnut through them.

The post-mortem examination of the other case showed the morbid changes more clearly. The liver was congested, and slightly softened, and the intestines were marked with patches of inflammation along their course externally, *i. e.* peritoneum. The omentum was thickened, and had been involved in the inflammatory action; the colon had two perforations through its coats, one the size of a small walnut, the other not so large. Through these openings some of the contents proper of the intestines had escaped, causing the general inflamed appearance of the other parts of the intestines. On cutting open the colon, I found extensive ulceration in different parts, and an effusion of a jelly-like matter under the mucous coat in other parts, which was of a dirty colour, and offensive to the smell. The ulceration in this case was undoubtedly the real cause of the coats giving way, which, from the escape of the contents of the gut into the abdominal cavity, produced the sudden sinking and death of the animal. The ulceration and change of structure, &c., of the colon would have killed the horse eventually had there been no perforation.

Of course, the rupture in Mr. Dyer's case took place only some few hours prior to death, as the animal could not be expected to live long after the contents of the large intestines had escaped into the cavity of the abdomen. Probably this was the effect of that peculiar ulcerative inflammatory action of the intestines, similar to the corresponding disease in man. I hope to be pardoned for the liberty I take in making these remarks on the case in question. Published cases become public property, and I write in good faith, fully sensible of my defects, but not deterred by them. Are there any symptoms by which one can, with any certainty, detect this state of the colon in the horse, and which I failed to detect in my patients? I knew, of course, I had a singular case, and perhaps some of your correspondents will assist me in this, and place me in a more enviable position as regards my own feelings, should another case of the kind come under my care. At present I can only judge such cases by the *absence* of any marked symptom. Continued

uneasiness, not acute pain, irregular action of the bowels with frequent discharge of mucus, and capricious appetite, also a small unsteady pulse, and rapid loss of flesh, with dejected countenance, being among the most prominent symptoms I found in the above cases.

USE OF SETONS IN "STOMACH STAGGERS."— TWISTING OF THE SINGLE AND DOUBLE COLON.

By R. BAILEY, M.R.C.V.S., Lambourn.

THREE years ago I had a case of stomach staggers, in which, after bleeding, endeavouring to purge the animal, applying mustard, then strong liniments, and afterwards blisters to the poll, I inserted four setons, two in front and two in rear of the ears, with most gratifying success.

I have had another case of the same kind this last March, and again resorted to setoning, without trying so much beforehand, except in the bleeding and purging way. Here, too, the effect of the setons was very evident, and that within twelve hours. In both cases the physic acted *after* the setons. I submit that this treatment tends to restore the functions of the sympathetic nerve in the shortest time, for I consider that is the part principally affected in the disease so strangely termed stomach staggers.

Last week I had a case in which the two colons were twisted, on the left side, like the strands of a rope. I never met with nor heard of such an occurrence before. I should not have been surprised to find the small intestines so entangled, but this was a novelty to me.

Excuse the expression *two* colons; you will understand my meaning.

A CASE OF POISONING IN A COW; SUPPOSED BY EATING OF THE YEW (TAXUS BACCATÆ).

By F. T. STANLEY,
Student of Veterinary Medicine, Aylesbury.

ON the 11th of May, I was sent by my preceptor to visit a cow, belonging to Mr. Pedel, of Wendover, which I found to

be suffering from very violent abdominal pain. She was constantly lying down and plunging about, the rumen tympanitic to a very great extent, the pulse about 90, and the blood-vessels in a highly congested state.

From the symptoms present, I thought she must be labouring under the effects of some vegetable poison. On inquiry, I found that there was a yew tree in the field, and I soon discovered traces of a cow having been there, and some of the small branches broken off.

To reduce the inflated state of the rumen, I gave—

Sodæ Carbonas, ℥ij, et Ol. Tereb., ℥iv ;

which in a great measure had the desired effect.

I then bled her, but could only abstract about 2 lbs. of blood, which flowed very slowly and was of a very dark colour.

As she still continued in pain, I gave a cathartic drench, composed as follows :

℞ Mag. Sulph., ℥vj ;
Flor. Sulph., ℥iv ;
Pul v. Sem. Carui, ℥ij ;
Aquæ, q. s.

I remained until she was considerably relieved, and requested the parties to let me know her state towards evening ; when the report was favorable. They said that she had voided a large quantity of dark-coloured fæces.

I then directed a little more laxative medicine, combined with a stimulant.

On the following morning all the alarming symptoms had passed off, and the animal was going on favorably. In a few days she was convalescent.

LANGUAGES OF ANIMALS.

DUPONT, a French author, who spent many years in studying the languages of animals, asserted that he understood twelve words—if they may be so called—of the vocabulary of pigeons ; twelve of common fowls ; twenty-two words of cattle-language ; thirteen of dog-language ; fourteen of cat-language ; whilst he believed that he completely understood the language of rooks.

Facts and Observations.

THE SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS OF FRANCE.

THE annual *séance* of the Society for the Prevention of Cruelty to Animals was held on Monday, June 18th, 1859. This society, which was thought impossible at first, has been prospering with each year, and has at length entered almost as thoroughly into French *mœurs* as into our own. The medals were distributed amid great enthusiasm, and speeches were made at which the heart of the philanthropist bounded with joy; verses were read which, if not exactly causing that of the poet to do the same, at all events displayed the interest which can even be given to bad verses by the goodness of the cause. The two medals which created the greatest general interest, were the one bestowed on a shepherd named Chatrier for an ingenious mechanical invention to be adopted during the treatment of sick sheep; and the other given to M. Pellis for his newly invented bit, whereby the mouth of the horse is uninjured even by the most unskilful rider.

CALCULUS IN A MARE.

A CALCULUS of an unusually large size was found in the lower bowels of a mare, which died the other day, belonging to Mr. Newton, of Pea Croft. For some time before the mare's death, it was evident that either a tumour or a calculus existed within the body, and it is supposed that a fall the mare had a few days previous to her death, caused a displacement of this concretion. It is perfectly globular, and its surface is smooth and polished. There is nothing unusual in these accumulations in the intestines of the horse, and the only peculiarity this presents is its size and weight, the latter amounting to upwards of 8 lbs. They vary very much in size, shape, and general appearance; and no doubt many of our readers have seen a large collection of them at Mr. Cartledge's surgery in Market Street. They have their origin frequently in some indigestible substance being taken into the stomach with the food, such as a piece of coal, gravel, or a nail, around which nucleus other matters adhere until a dense substance is formed, which frequently produces pain; and ul-

timately may either cause death by obstructing the passage of the food, or by causing a rupture of the bowel in which it may have been lodged. By the ancient physicians, they were designated "Bezoar stones," a Persian name, signifying a destroyer of poisons. The most miraculous properties were at one time believed to be possessed by these bezoars, and they were worn by the superstitious for the purpose of warding off infectious diseases, and preventing the influence of demons; and it is recorded that as much as £300 has been given for them; and that in Holland and Portugal they were hired during the prevalence of an epidemic for a ducat a day. The nature of these calculi is very ably treated in an essay by Professor Morton, of the Royal Veterinary College. According to his arrangement the one above recorded belongs to the triple phosphate kind.—*Sheffield Independent*.

NEW TEST FOR CARBONATE OF LIME IN WATER.

THE berries of the privet—*Ligustrum vulgare*—furnish a waxy substance of a beautiful crimson colour, to which the name of *liguline* has been given by its discoverer, Professor Nickles. If into pure water, a drop of the solution of this principle be let fall, it gives to it a bright crimson tint; but if the water contain carbonate of lime, the colour is changed to blue.

This test may be applied by means of paper saturated with a solution of liguline, and dried.

Liguline may also be used as a dye, and it is said its solution when viewed through glass tubes presents some singular optical effects.

UVA URSI A SUCCEDANEUM FOR ERGOT OF RYE.

It has been for some time known, that the fœtus may suffer from the administration of ergot to the mother; and M. St. Claire Deville has recently brought forward statistics which would tend to show that the fears entertained on the subject are not exaggerated. He considers that one of the causes of so many still-born children is the use of ergot in parturition.

Struck by these facts, M. Gauchet has given, with decided success, an infusion of *Uva ursi* in a case of lingering labour.

PARTURIENT EFFECTS OF THE SULPHATE OF MORPHIA.

DR. BYRD, in the *American Med.-Chir. Review* for May, says, "I do not regard morphia as possessing superior properties to ergot, but I believe it is generally certain in its effects; and I have several times administered it with success, in arousing the dormant contractions of the uterus, when the secale has failed."

IODINE AND BELLADONNA IN MAMMITIS.

DR. WEATHERLEY has used an ointment made by mixing together, Iodine, gr. xv, Extract. Belladonnæ, gr. xx, Cerat. ʒij, in several cases of inflammation of the breast, with excellent effect.—*Ibid*, and *Medical Times and Gazette*.

THE CHINESE SUGAR CANE.

IN a previous number we gave an account of this plant. In France its cultivation is still attended with success. It is stated to yield—1. An excellent sugar. 2. Farina obtained from its seeds, makes good bread and chocolate. 3. Alcohol and an agreeable tonic wine are prepared from the stem and leaves. 4. Certain dyes, hitherto supposed to be peculiar to China, are also produced from these; and 5, the residue makes admirable paper.

The plant is about to be introduced into Australia, where it is supposed that in the seasons of drought, to which the colony is so liable, it will be found valuable as food for cattle.

ASPHYXIA.

IT results, according to M. B. Séquard, from his experiments on asphyxia, that warm-blooded animals—the adult as well as those just born—resist asphyxia in proportion to the lower degree of their temperature, provided always that the temperature do not fall below 18° to 19° centigrade; that the law laid down by Legallois and Edwards is erroneous, the resistance to asphyxia being greater, under certain con-

ditions, in the adult than in the recently born; and that the differences in the resistance to asphyxia existing in animals of different species and ages, must not be considered as differences depending upon the temperature of the animal itself, that is to say, upon the difference in the properties of the tissues and organs in the different species and at various ages.

SUGAR IN THE BLOOD.

M. SANSON, of Toulouse, still maintains his assertion, that dextrine exists normally in the blood and tissues of the herbivora. The reason why experimenters in Paris could not obtain it is that they operated upon butchers' meat—that is to say, upon tissues taken from animals killed by loss of blood. M. Sanson's experiments were all made on animals that died from disease, and where the blood still remained in the body.

THYMUS GLAND.

M. FRIEDELSEN shows in his work on the thymus gland—1st. That this organ may be removed without injury to the general health of the animal. 2d. That animals deprived of their thymus gland take a larger quantity of food than natural. 3d. That the increase of the body of animals operated on is absolutely greater than that of animals in a normal state, but that relatively to the quantity of food taken the growth is less. 4th. The sanguification of blood in them is more rapid; the blood is richer in albumen and water; the number of globules of the blood is absolutely greater, but that of the red globules absolutely less; the excretion of albuminous matters is increased, of carbonic acid lessened; the excretion of water by the skin greater, by the kidneys less. 5th. The growth and chemical constitution of the bones are also affected by the extirpation of the thymus. The pathological deductions from his physiological researches are—1st. That the thymus, neither in its normal nor in its hypertrophied state, undergoes turgescence, excepting after the taking of food; and that the pretended hyperæmic and periodical turgescence does not really exist. 2d. That the organ never interferes with the respiration or the circulation, either in its normal or in its hypertrophied state, nor compresses the respiratory nerves; and 3d. That in neither state, therefore, does it interfere with the cerebral circulation, or the innervation of the nerves of the glottis.—*Medical Times and Gazette.*

Extracts from British and Foreign Journals.

OPHTHALMIA AS A RESULT OF THE USE OF ARSENICAL WALL-PAPERS.

By ALFRED S. TAYLOR, M.D., F.R.S.

As it is now a demonstrable fact, that a fine dust or powder containing arsenic is evolved from the walls of rooms which are covered with arsenical or *emerald green* papers, it becomes a question whether some obscure cases of inflammation of the conjunctiva may not be traced to this cause. Arsenic, it is well known, has a powerful action on the mucous membrane: when taken in small doses at intervals, one of its marked effects consists in producing irritation and inflammation of the conjunctiva, as well as of the membrane of the nose and fauces. These symptoms have been frequently observed in chronic poisoning by arsenic. The following case of a friend appears to support the view that, exposure to an atmosphere containing an arsenical compound diffused through it may produce this symptom of chronic poisoning by arsenic. I here quote the words of my friend as contained in his letter to me dated January 9th, 1858. In reference to his library or sitting-room he says—

“The library was papered in 1853 with a brilliant green flock paper, but owing to the bad draught of the chimney, one of the windows was generally kept open with or without a fire. This naturally prevented my using the room much; but about a year or more afterwards, the defect seemed to cure itself, and it has not since given the same inconvenience. I on two occasions made a more than ordinary use of the room. The first time was during the winter of 1856-7, when my mother was abroad, and it was my only sitting-room; and the second time was during the spring of 1858, when I was busy with some literary work. Both these occasions were followed by an attack of illness, consisting of great depression, a want of interest in anything, a husky feeling in the throat, and a soreness and irritability in the eyes. It was not until you analysed my paper in the summer of 1858, that I was aware of its containing arsenic. I then ordered it to be pulled down, which was done while I was in lodgings. I had, however, the book-cases carefully covered with thick cloths to prevent the oak being splashed by the

decorators, and these cloths were not removed until the new papering was completed. The paper, was I believe, removed by wetting it, so that no dust would be created in the operation. We may safely, therefore, assume that any dust in the book-cases, which are all glazed, must have been there before the papering was altered. After my gradual recovery from my attack of illness in the summer, my eyes were comparatively quiet until my return to town, when I took possession of my new room, and commenced dusting the books in the book-cases, which had probably not been thoroughly dusted for two or three years. After dusting several of the cases, I was again troubled with inflammation of the eyes, which made me think of the possible effect of the dust. I therefore discontinued operations, and gradually recovered. I left two book cases undisturbed, from one of which you will remember that we obtained the dust which you lately analysed."

It was the discovery of arsenic, in a comparatively large quantity in this dust, which led me to institute further inquiries, which resulted in the discovery that the green arsenical pigment must, when the paper is unglazed, be continually escaping in an impalpable powder from the walls. An optician, from whose shop I obtained additional evidence of the escape of the green pigment from the walls, informed me that the eyes of the men employed to hang the paper were affected, although at that time he had no suspicion of the cause.

When I saw my friend (whose case is above related), pending the second attack, the conjunctiva of the lids was of a deep red colour, along the tarsal margins and at the angles. The lids were slightly tumid, and had a tendency to eversion. Vision was painful. It was the apparent connexion of this second attack with the dusting of the books which led him to request me to examine the dust.

Since that time I have received several communications on the subject, bearing out the view that this insidious form of arsenical poisoning may be productive of inflammation of the conjunctiva. A medical practitioner resident in the country, since his occupation of one of these arsenical chambers for a few months, had suffered from mucous derangement of the bowels, colic, and inflammation of the tarsal portions of the conjunctiva. I examined the wall-paper, and found it loaded with arsenic, coarsely laid on and easily detached by the slightest friction. A well-known member of the profession in London, who has published his own case, informed me that he had been out of health since he had occupied a room, the walls of which were covered with a green paper, and that he had suffered from inflammation of the eyes. I found

arsenic in the dust collected from the picture-frames in the room.

These facts appear to show a close relation of cause and effect. It is said that the men who manufacture the paper do not suffer, but so far as I can ascertain, the colour is ground and well mixed with water. It is laid on the wall-paper in a wet state, and thus the workmen are not exposed to the same amount of risk as those who live in chambers where the paper is hung in a dry state, and where, from the porous nature of the composition (whiting and arsenical green) changes in humidity and temperature may lead to the separation of portions of the noxious pigment. The glazing or sizing of the paper may to some extent prevent these accidents by giving a more permanent fixing to the material.

A well-known manufacturer of "night-lights" in London, informed me that when the green (arsenical) paper was used for wrapping the night-lights, the men who cut the papers suffered very much in their eyes, and could only work at it for a few hours. I informed him that the use of this pigment for night-lights was very dangerous, since the smouldering of the paper in a close room might produce serious effects. He now uses other and innocent colours.

I believe that the first attack of inflammation of the eyes, from which my friend suffered, was the result of the *constitutional* effects of slow poisoning. I give this opinion because there were other symptoms from which he suffered, also indicative of the constitutional effects of arsenic. The second attack was probably dependent on the *local* action of the arsenical dust. It came on *rapidly*, and was not, so far as I am informed, attended with the other constitutional symptoms. In the two other cases, of medical men, referred to in my paper, the whole of the facts point to a *constitutional* action of the arsenical dust, bringing on an attack of inflammation of the conjunctiva *gradually*.

This probable cause of one form of ophthalmia is worthy of the notice of ophthalmic surgeons.

[Dr. Taylor informs us that, by a very simple method, he has succeeded in preventing the injurious effects arising from the use of these papers; so much so, that after six months not the slightest indication of the existence of arsenic could be detected in the dust, &c. lodged about the room. His plan consists in covering the paper with weak size.—EDITORS.]

OIL OF THE DUGONG, A SUBSTITUTE FOR COD-LIVER OIL.

SEVERAL substitutes for cod-liver oil have been proposed. Dr. Hobbs, of Moreton Bay, has lately recalled attention to the curative properties of the Dugong oil, and if reliance may be placed on his experience of its efficacy, he has fallen on a discovery of inappreciable value.

The Dugong is found in considerable numbers in the rivers and bays of the eastern coast of New Holland, from Moreton Bay to Cape York. This animal is thus described in 'Knight's Animated Nature':

"The Dugong (*Halicore Dugong*, Cuvier), is a native of the Indian Seas, being common among the islands of the Indian Archipelago, and visiting also the coasts of New Holland. Its favorite haunts are the mouths of rivers and straits between proximate islands, where the depth of water is but trifling (three or four fathoms), and where, at the bottom, grows a luxuriant pasturage of submarine algæ and fuci. Here in calm weather may small troops be seen feeding below the surface, and every now and then rising to take breath. The position of the mouth, the muscular powers, and mobility of the lips, garnished with wiry bristles, and the short incisor tusks of the upper jaw, enable these animals to seize and drag up the long fronds of sub-aquatic vegetables which constitute their nourishment."

The use of cod-liver oil in the treatment of diseases is a comparative novelty. The wonderful cures ascribed to its agency, allowing for any possible exaggeration, establish its claims to rank among the chief resources of the healing art. But cod-liver oil is intolerably nauseous. The patient turns from it with ineffable disgust. If, then, it can be shown that the dugong oil is of equal medicinal value, its substitution would be a great blessing to multitudes. We do not know why we should assume that medicine must always be nauseous to be effectual. One of the greatest domestic trials is the infliction of torture with the hope of facilitating recovery. The process by which a cure has been sought, has often proved more fatal to the constitution than the original malady. Anything, therefore, which abates the bitterness of the cup, ought to command the attention of all, whether of the profession or not.

It appears from analysis, that cod-liver oil contains a small portion of iodine, which the dugong oil does not. It is, of course, a question for medical men, whether this property is the active agent in promoting a cure. This theory Dr. Hobbs

denies ; he asserts that it is exploded ; and that the efficacy of the cod-liver oil is in the carbon which it contains—that is eighty or ninety parts out of a hundred of its substance. The dugong yields a pure, sweet, palatable oil, which may be administered in various ways. It may be used in cooking, and thus form part of the diet of the patient. By the Malays and the Australian aborigines the animal is hunted for food.

Dr. Hobbs has given many instances of cure by the use of the dugong oil, a remedy which he has prescribed for several years past. It has been found effectual in those various diseases which are attended with, or result from, exhaustion. The carbon consumed is not replaced by ordinary nourishment, and the tissues of the body are taxed to make up the deficiency, and thus the life is sacrificed. The aim of the physician in prescribing the cod liver, and the object of the substitute prepared by Dr. Hobbs, is to supplement what is wanting, and thus give the system time to rally. For every failure in the health of man there is a distinct and adequate cause ; nature is not blind, however darkly she may be interpreted. Thus we have reason to believe that almost all forms of disease will be held in check when science shall discover where the natural action is disturbed.

“ A living being, considered as an object of chemical research, is a laboratory within which a number of chemical operations are conducted. Of these operations, one chief object is to produce all those phenomena which, taken collectively, are denominated life ; while another chief object is to develop gradually the corporeal machine, or laboratory, itself, from its existence in the condition of an atom, as it were, to its utmost state of perfection. From this point of utmost perfection the whole begins to decline as gradually as it had been developed ; the operations are performed in a manner less and less perfect, till at length the being ceases to live ; and the elements of which it is composed, again set free, obey the general laws of inorganic nature.”

If this be a just representation of the human body, it seems clear that the supply of a sufficient quantity of carbon is as requisite to the human machine as coal is to a steam engine, and that art must step in when nature fails.

The diseases for which Dr. Hobbs has found the dugong oil most efficacious, are chronic dyspepsia, chronic dysentery, and incipient consumption.

The editor of the ‘Sydney Morning Herald,’ whence we have taken the above extracts, says : “ If the dugong oil

will answer the purpose of the cod-liver oil, not only have we a most important addition to our exports—for as the demand must be enormous, so will be the supply—but what is far more desirable, an alleviation is offered to multitudes, whose lives are valued beyond rubies, and who may receive all the benefits to be derived from the cod-liver oil, and yet escape the misery which attends so often upon its use.

“The cure of consumptive diseases has of late years assumed a new development. It is found that often the catastrophe may be arrested or long deferred. Consumption, indeed, blights the happiness of millions. Who has not marked the stealthy progress of this fell destroyer? Just as life opens in its brightest forms, just when the frame has attained its perfection, and the cultured understanding is prepared for the business of life, the symptoms too well known to be misunderstood alarm all but the destined victim, who is the last to quit hope. Every professional man must have witnessed the long agony which precedes these domestic bereavements, and will hail, as of priceless value, any discovery which can render them less common among us.

“A notion long prevailed in England that consumption was all but unknown in the colonies. No doubt the climate has restored many in whom the progress of the disease has been slight; but there are forms of consumption which are accelerated, if not by the climate, yet by the prevailing habits of colonial life. Neither in this nor any other country is impunity granted to those who trifle with physical laws; and here, as elsewhere, the children often perish in the flower of their youth, and pay, in their untimely death, the inevitable penalty entailed by the vices of their ancestors.”

Dr. Andrews has found the oil of the *pilcher fish*, which is met with in great quantities on the coast of Devon and Cornwall, to be an effective substitute for cod-liver oil. He adds to every ounce of the oil two grains of the iodide of iron, and says this compound is not disagreeable to take, and is easy of digestion, and does not rise; while he considers that it feeds and gives a general tone to the system, much more than cod-liver oil does.

ON A NEW SOURCE OF AMMONIA.

MR. ALEXANDER WILLIAMS, of Neath, in a letter to the ‘Journal of the Society of Arts,’ has suggested a means of economising the waste nitrogen products escaping from the

oil of vitriol chamber, by effecting their conversion into ammonia. This is done by passing the escaping gases, mixed with steam, over heated charcoal, and then into dilute sulphuric acid, by which sulphate of ammonia is obtained.

The following is Mr. Williams's description of the arrangement he employs, and which has been tried on a large scale at the Pontardawe Vitriol Works.

The apparatus fitted up was of the following description : "A furnace was built above the exit tube of one of their vitriol chambers, and a brick gas retort, about fourteen inches in diameter, eight feet long, and open at both ends, was passed through its whole length. The retort was filled with charcoal, and kept at a red heat; the exit tube of the chamber, and a steam-jet to supply the hydrogen, were attached to one end, whilst to the other end was fixed an upright leaden cylinder, filled with coke, and moistened with diluted sulphuric acid. On passing the waste gases and steam through the retort containing red-hot charcoal, both were decomposed, the oxygen of each uniting with the charcoal to form carbonic acid; the nitrogen and hydrogen combining to form ammonia; then together, probably forming carbonate of ammonia, which was again decomposed by the diluted sulphuric acid, the sulphate of ammonia being found remaining in solution. This solution was then evaporated, and in July, 1857, I first had the pleasure of obtaining any quantity of crystals of sulphate of ammonia, by this process, from a vitriol chamber in actual work."

Mr. Williams does not intend to make this process the subject of a patent.

THE RELATIVE ADVANTAGES OF ETHER AND CHLOROFORM.

AT the last sitting of the Imperial Society of Medicine of Lyons, the important question of the relative advantages of ether and chloroform as anæsthetics was fully discussed. Dr. Barrier stated that, to his knowledge, there were only three well authenticated cases in which ether had caused death, and that even in those there were some extenuating circumstances. The deaths caused by chloroform, on the contrary, were numerous. If, therefore, ether was slower in its action, and more disagreeable in its effect, it was, on the other hand, infinitely less dangerous. Dr. Pétrequin, following on the same side, drew a parallel between the means possessed by science for counteracting the dangerous

effects either of ether or chloroform, and showed that in this respect the latter was greatly inferior to the former. Several other members expressed similar opinions, without there being a single voice in favour of chloroform; and at length the society, on the motion of Dr. Barrier, passed the following resolutions: "1. That ether, used as an anæsthetic, is less dangerous than chloroform. 2. That anæsthesia is produced as constantly and completely by ether as by chloroform. 3. That if ether presents inconveniences from which chloroform is exempt, such inconveniences are of slight importance, and are preferable to the danger inherent to the use of the latter. 4. That consequently ether is to be preferred to chloroform."

A MAD DOG AT LARGE.

THE following account of a mad dog is given in the French journal the 'Droit':—About a month back, a large dog belonging to a farmer, named Parrain, at Maisons Alfort, was bitten by another dog, afterwards discovered to be mad, and Parrain immediately sent the animal to the veterinary school in the place, where it underwent a course of treatment. The result was that the dog was declared not to have suffered from the bite, and was given up to its owner. The latter, however, by way of precaution, kept it tied up in his yard. On Saturday the dog began howling, and soon after getting free, by gnawing through its cord, bit some turkeys and sheep; then rushed from the yard, and, proceeding down the high road, entered the village of Villeneuve St. Georges, and bit a horse and some sheep and dogs. Three persons fired at it, but without effect. The animal then turned towards Choisy-le-Roi, and, seeing a flock of sheep, rushed into the midst, and bit several. It afterwards rushed on the shepherd, a young man named Renvoisée, and bit off the forefinger of his right hand. The people of the farm, armed with spades and forks, succeeded in driving the dog into a barn, and fastened it in. As it was considered advisable to take the animal alive, that it might be examined before being killed, the barn door was opened a little, and when the dog thrust out its head, a gendarme pinned it down with a fork, and his comrades forced it into a sack. The dog was then taken to the veterinary school at Alfort, where it was pronounced to be mad. Medical assistance was, of course, immediately afforded to the young shepherd who was bitten, and precautions were taken to prevent the animals and poultry bitten by the dog from doing mischief.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire, Bruxelles,
For May, 1859.

ON INVERSION OF THE WOMB OF THE LARGER DOMESTICATED ANIMALS.

By MONS. F. DENEUBOURG.

WHEN inversion of the uterus takes place in the females of our large domestic animals, the reduction of this organ is not the most difficult nor the most important thing to effect. To retain the organ in its place is the principal object to which the attention of the practitioner should be directed.

The author asserts that inversion of the uterus is more frequent in the cow, ewe, and goat, than in any other of our domestic animals; that it occurs generally within twenty-four hours after parturition, and never after the third day; that it is not dangerous in the cow, but speedily fatal in the mare.

The inversion of the uterus may be preceded by that of the vagina, or the one may be followed by the other. In the first instance, the efforts to expel the fœtus press the abdominal viscera backward, compress the organs contained in the pelvic cavity, and thereby cause the inversion of the vagina. In the second, the inverted uterus drags the vagina after it, or the vagina is inverted by the force of the traction exerted to withdraw the fœtus.

Causes.—This accident is frequently the consequence of difficult parturition, or of the extraction of the fœtus or placenta by unskilful hands, which irritate, displace, or lacerate some part of the vagina or uterus. Spasms that appear without any apparent cause soon after parturition, and which are designated as uterine, distension of the stomach, constipation of the bowels, retention of urine, &c., are also other causes. The inversion is likewise greatly favoured by the inequality of the floor of the shed or stable, which is so constructed for the facility of draining, the ele-

vation of the fore part being considerably greater than that of the hinder.

Symptoms.—When the vagina alone is inverted, it presents the appearance of a tumour about the size of a child's head, the surface of which is smooth and of a dark purple colour. Inferiorly it has a sort of excavation, which is the entrance to the uterus and the meatus of the bladder. In inversion of the uterus, the tumour is of a much larger size; and this increases as the inversion becomes more or less complete. It is of an elongated shape, pedunculated towards the vagina, and extending to the point of the hocks. In the mare, the aspect is that of the mucous membrane, while in the ruminants, the membrane is rugous and uneven, being studded with elevations; these are the *cotyledons* of the placenta; which usually has not been expelled. It is of a dirty purple colour, and covered with the evacuations which are so frequently voided by the animal.

Among the complications, the author describes that of the rectum and the bladder, as being very dangerous. This latter has only been observed once by him, and that was in a mare.

He reports a case of a cow having calved late in the evening, and the cow-herd in the morning, by the light of his lantern, saw a mass of something behind the cow which he thought was the placenta. He took the fork with which the dung is removed, and stuck it into this mass to take it away, but being unable to do so he withdrew the fork, and thinking to get a better hold, he stuck it in a second time with great force, without, however, succeeding in his attempt. He now discovered his error, and went to inform his master of his mistake with sorrow. He was immediately dispatched to Mons. Deneubourg, who on his arrival found the uterus was burst and much lacerated, and there was great loss of blood. He proceeded to reduce it in the usual way, and the animal recovered in a very short time.

The author now enters upon a lengthened description of his method for reducing the herniated organs, in which he shows great skill. But we proceed rather to consider his plan of retention after they have been returned to their place. This consists in pouring into the uterus, as quickly as possible, two or three pailfuls of some mucilaginous decoction, which is done by means of a sort of funnel, and is continued until the violence of the straining, which always expels a quantity of the fluid, becomes less, and the liquid returned is not so much stained with blood.

The effects of this new form of pessary are—1st, By its

fluidity, its weight and volume, it has an important mechanical action. 2dly, It operates as a detergent and antiphlogistic bath, which is of undoubted benefit. 3dly, It has a peculiar physiological action, which is very efficacious. The liquid being poured into the organ rapidly distends it, and by its fluidity and weight the organ is brought into its proper place, thus perfectly reducing the parts which were before only imperfectly so. But, more particularly, by its diffusible gravity, it opposes a relapse or second inversion.

This method *alone* the author assures us will, in the great majority of cases, suffice; but when the patient is far off, he sometimes, as a precaution, employs in addition to it sutures through the vulva.

RÉSUMÉ OF THE REPORTS OF THE VETERINARY SURGEONS OF THE GOVERNMENT, AS TO THE HEALTH OF THE ANIMALS IN THE PROVINCE OF BRABANT.

THIS last quarter has not been distinguished by any extraordinary events, being, indeed, much the same as the previous one. The want of provender has been followed with consequences which are not without interest to the agriculturist, and has had some influence on the health of the domestic animals.

Maladies under the form of atony of the digestive organs have been of frequent occurrence in the horse. The animals lose their appetite, paw the ground at intervals, look round to their flanks which are distended, lie on their side and sometimes on their back, while others sit on their haunches like dogs, the pulse is slightly increased, the mouth cold, tongue coated, mucous membranes yellow, and constipation is present.

The treatment consisted in the exhibition of drastic purgatives. In some districts sulphuric ether with opium has been given.

Glanders and farcy.—These diseases, amongst the towing-horses on the canals, number thirty-four. *Charbon* has continued to prevail among the swine in some of the villages.

Puerperal Fever has been more frequent among cows than during last quarter. Does this malady arise from a paralytic state of the ganglionic nerve, or apoplexy of the central nerves? Mons. Fabry, of Diest, holds the second opinion, which he founds upon the good effects of bleeding; and in

illustration of which he gives two cases. A cow calved about noon, without any difficulty. At six o'clock the next morning she was down, and comatose; pulse irregular, feeble, intermittent, and undulating; the respiration slightly stertorous; contraction of the eyelids; the eye insensible to the touch; the pupils not dilated; on raising the head and letting it go, it fell like an inert mass; the temperature of the body was lowered; the sphincter muscles of the anus and bladder relaxed. Blood was abstracted to the amount of three kilogrammes (about 7 lbs.). Sulphate of soda was given, dissolved in warm water, and frictions with ammonia were applied to the dorsal region. Two hours after, the bleeding was repeated to the same amount. At ten o'clock the patient was better. Five kilogrammes of blood were now taken from the mammary veins, and from this time the patient rapidly got well.

In the second case, Mons. Fabry took seven kilogrammes of blood at two bleedings, adopting the treatment otherwise, as above, and adding cold affusions to the head. The same evening the patient was better, and the next day she was convalescent.

Journal des Vétérinaires du Midi, for April, 1859.

CONGESTION OF THE POSTERIOR PART OF THE SPINAL MARROW.

By M. CAUSSE, Veterinary Surgeon to the 11th Chasseurs.

AT first sight there appeared to be very little the matter with the patient, which was a troop-mare; but on a closer examination, it was found that the exterior of the body was not in a normal state, the position of the limbs not being natural. The fore-legs were placed wide apart, and the hinder ones brought forward under the centre of gravity; the pulse was regular, with a slight tension of the artery; the mucous membranes were somewhat redder than usual; but there was no loss of appetite.

On passing the hand over the loins, the animal evinced great pain, and if the pressure was continued she bent her hocks so much that there was danger of her falling down. She could neither move backward nor forward, without this danger of falling.

Diagnosis.—To facilitate the treatment, it was necessary to ascertain whether this affection, which had commenced with all the characters of sanguineous apoplexy, had invaded a considerable portion of the spinal marrow. To effect this, Mons. Caussé bethought himself of a sponge dipped in hot water, which is used in similar cases by medical men. He began at the withers, and continued its application along the spine to the lumbar region. At the dorsal region the animal began to flex the back, and a certain nervous twitching of the skin when he arrived at the lumbar region—symptoms worthy of the attention of every practitioner—manifested themselves; in fact, the water no sooner reached these parts than the animal groaned with pain. This was accompanied with frequent grinding of the teeth; at the same time the posterior part of the body gave way, the legs failed, and, in spite of the endeavours of three men to support her, she fell on the litter. She got up, but the hind legs refused their office, and she fell again; again she rose, but the hocks remained flexed, as if the tendo-Achillis had been severed; the tail, which had up to this time remained in a state of complete immobility, was now agitated, and moved about in all directions for nearly ten minutes; the nostrils were dilated; and the grinding of the teeth became continuous. From this the author concluded that a high degree of irritation, produced by an afflux of blood, existed in the posterior part of the spinal marrow and the envelopes that cover it.

The treatment consisted of strong frictions with vinegar over the whole of the dorsal region, and also the internal and external surfaces of the hind extremities; after which a blister was applied to the lumbar region, and also on the thighs. She was likewise bled from the coccygeal artery. The bleeding was repeated the next day, but this time the jugular vein was chosen. The blood, which was received in the testing tube, was found to possess its normal constituents. This treatment, with the addition of some internal remedies, was continued for some time, and the patient ultimately recovered, and that without losing any of her vigour and fine action, for which she was remarkable.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

The Horse and his Master. By VERE D. HUNT, Esq., late 100th Regt. County Dublin Militia. London: Longman and Co.

To the veterinary surgeon the horse presents himself in two aspects—health and disease. When in the former state he ministers to his necessities and his comforts, in common with others; for there are but few persons who do not derive some gratification from that noble animal. It must, however, be conceded that it is in the latter state the horse becomes the greater object of solicitude to the practitioner of veterinary medicine, since, then, the energies of his mind and his professional knowledge are called into requisition, so as to remove the malady under which the animal may be labouring, or to lessen his sufferings. On this rests another fact—his vocation furnishes to him the means whereby he lives. What wonder, then, that treatises referring to the horse under disease are more frequently commented on in this journal than those treating of the laws of hygiene, breeding, &c. Still it is to the advantage of the veterinary surgeon to maintain health; a position cavilled at by many, and hard to be understood. But there is a duty man owes to his fellow-man, and in the army it becomes the especial province of our professional brethren, by the adoption of sanitary measures, to prevent the outbreak of disease, thus realising the adage, “Prevention is better than cure,” or, should it show itself, to check its progress by the removal of the cause.

The present little work embraces hints on breeding, breaking, stable-management, training, elementary horsemanship, riding to hounds, &c. The immediate cause of its publication by the author appears to have been his conviction of the

degeneracy of late years in the breed of our horses, and an inquiry into the method to be adopted to remedy this, which he fears may some day be found to be "a festering rottenness in the core of the country." He says,

"My object is to lay before all who prize the horse from a love of the animal, or from sordid or prudential motives, my views as to the great danger in which we stand of losing him altogether, as a sound and useful animal, because of the yearly increasing deterioration which is visible to the accurate observer; and also, what I feel firmly convinced is the most effective mode of generally diffusing that soundness, and the varied desirable qualities which render the horse valuable for general purposes, and which, I hope, I have clearly shown can be much preserved and accelerated by judicious attention; and how great an improvement can be made, and what an amount of health, comfort, and longevity, can be added to our most faithful, docile, and affectionate servant, the cheerful companion and willing slave of our pleasures, and the staunch ally 'midst death and wounds, and war's alarms'—rendering him more generally sound and efficient, and enhancing his value by improving his constitution, form, and action." (p. 4.)

For "breaking" the horse Mr. Hunt does not appear to be an advocate of the "Rarey system," especially when applied to young horses generally, but rather to that recommended by Mr. Clarendon, the fundamental principle of which is, "that the propelling power of the horse resides in his hind quarters, and there chiefly in his haunches."

"All progressive motion in organised beings is produced by alternate contraction and extension of their propelling members, whether the instrument of motion be the wing of the bird, the tail or fin of the fish, the annular process of the reptile, or the leg of the biped or quadruped; its efficiency equally depends upon its being brought into contact with the resisting medium when in a state of contraction, so that the corresponding extension, when it takes place, necessarily forces the body forward in the direction of the least resistance. Thus the bird and the fish cleave a passage through their media of air and water respectively, and thus all creatures which move on the surface of the earth bring their propellers to the point of resistance in a contracted state, moving their weight forward with a velocity proportioned to the power exerted in the subsequent extension of the contracted members. In case of the healthy horse, the fore leg comes to the ground in an extended state, all its bones, with the exception of those at the pastern joint, abutting on one another in very nearly a straight line, from the point of the shoulder to the extremity of the leg, so that being manifestly incapable of further extension, it must be concluded, on the principles just laid down, that it is incapable of exerting any propelling energy, and consequently the only purpose it can serve is that of sustaining the weight of the incumbent fore quarter during the successive advances of the hind legs. Add to this important consideration,

that the heavy structure of the fore legs is joined to the rest of the frame by merely muscular attachments calculated not to communicate impulse, but to break concussion, and I trust it will appear that we have sufficient grounds for justifying the conclusion that the propelling power of the horse does not reside in his fore legs.

“But when we turn to the hind legs, which, instead of being united by a flexible and elastic muscular attachment to the rest of the frame, are inserted into the extremity of the spinal column by connecting bones of large dimensions, and eminently calculated from their direction to communicate impulse to the whole figure, we find all the conditions requisite for the exertion of progressive energy present in a very high degree. The limb is brought to the ground with all its parts in a high state of contraction, the shank bone forming an angle with the upper leg bone or tibia at the hock; the tibia forming an angle with the thigh bone or femur at the stifle joint, and the femur forming again another angle with the haunch bone or ischium, which last abuts directly on the lumbar vertebræ, and is the immediate agent in conveying the impulsive force of the hind legs to that centre of the system. Here then we have a series of no less than three angles, not to speak of the elastic apparatus of the pastern, in the successive opening out of which, by contraction of the limb at every stride, all the muscular energy of the hind quarters is called into play, and thus the foot forming the point of resistance, the body of the animal at every stretch of the hind legs is shot forward with a velocity proportioned to the amount of muscular action exerted in that process of extension. Thus is it made perfectly clear, that the whole propelling power of the horse is situated in, and exercised by, the hind quarters.” (p. 50.)

Our author contends that many disorganizations might be prevented by proper training, and adapting the burthen to the figure of the animal, so as not to disturb the natural centre of gravity, of which he offers illustrations, and closes his observations under this section by stating—

“If I be right in these views, founded as they are on the first principles of mechanical philosophy, it would follow that for contracted hoofs, ring-bone, navicular disease, splents, spavins, curbs, shoulder lameness, and all the rest of the organic diseases which affect the legs of horses, as well as those cases of supposed lameness which are nothing more than irregularities of the action, the radical cure ought to be sought at the hands, not of the veterinary surgeon, but of the veterinary trainer. Such a conclusion will no doubt appear startling to the profession, but if the facts be as I assert, the conclusion is inevitable.” (p. 77.)

Under the head of “Stable management” he strongly condemns low and dark stables, and as justly contends that

“Ventilation is imperative to the health and general soundness of animal nature. The air we inhale is a very different one from that which we expire; the former is atmospheric, and charged with life-sustaining qualities; the latter is constituted of deleterious gases,

inimical to animal life. If not, therefore, carried away by proper ventilation, a combination of its poisonous qualities with the atmospheric air renders its inspiration a matter of certainty; and, as effect following upon cause, if the life-supporting qualities of that air be impregnated with death-dealing gases in insufficient quantities to suspend totally the functions of nature, we have, beyond the possibility of controversion, a proportionate deterioration of constitutional power. * * *

"The question may occur to the reader not well informed on the subject before us: Why does not this poison collect in the atmosphere out of doors, seeing that at all times there is plentiful sources of it in the respiration of animals, combustion, fermentation, &c.? It would be so if the most minute dispensations were not attended to in that almighty whole, creation, under the never-sleeping eye of a bountiful and vigilant Providence; and if by one of these beautiful arrangements,—the attributes of the mighty Governor of animate and inanimate nature,—the casualty had not been anticipated by the principle of vegetable existence; it being ordered that that enemy to life, carbonic acid gas, should be decomposed by them, retaining the carbonic, and setting the oxygen, the vivifying fluid of animate nature, free. * * *

"The proper means to be adopted for the purification of the stable, will be having a mode of ingress for the pure air, about two yards distant in the walls of the stable, near the foundation, and a similar channel for egress at the opposite wall, above the horses' heads, as high as possible. The holes over the heads may be nine inches square, and those on a level with the ground at the opposite wall not more than four inches. The working of such machinery can be easily discovered, by placing a feather or lighted candle at the openings near the ground, when either will be blown inwards, proving an inward current of atmosphere or pure air; while a similar trial at the holes near the ceiling will show an outward stream of the lighter poisonous gases. The man must be either very obtuse in intellect, or very reckless of his own interest and his servant's comforts, that after consideration of these facts will neglect the remedy within reach of the poorest or most niggardly.

"Ignorant grooms will frequently stop the ventilators with hay, more particularly in winter, either not knowing, or not caring, that ventilation is as requisite at one season as another; and that if accustomed to a healthful current of air, the most tender horse will never take injury from it." (p. 94.)

Our limits preclude an extension of this review. We commend the work to the notice of our readers, as it contains much sound advice, the stability of the basis of which the author has a perfect reliance on.

THE VETERINARIAN, AUGUST 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

ON LECTURES DELIVERED BY THE MEMBERS OF THE
PROFESSION.

IN a previous number we regretted the want of co-operation amongst us. We did so, because the fact itself is too patent not to be both known and felt; whilst it is destructive of our best interests, by presenting a barrier to all advancement. Further, the separation of the head from the members, and the members from each other, awakens intestine feuds alike injurious to both, and should the breach widen, but little hope can be entertained of our ever becoming, as a body, what we ought to be, and what the importance and value of our profession demands. Why, then, do we act thus suicidal? Why is there so little of the *esprit de corps* among us? Why are such petty jealousies allowed to prevail? Why is there an assumption of superior acquirements on the part of some, which, perhaps, do not exist, but which, nevertheless, leads to presumption? "Stand by, for I am *wiser* than thou," seems to be the expression of these persons. 'Tis a pity such a feeling should be indulged in, since it is an indication of weakness of mind, whatever may be thought to the contrary.

There appears to be a cold suspicion lurking among us, causing a want of union. We do not amalgamate. This repulsion both chills and deters from exertion. If efforts be made, the motive is too often impugned; no stimulus is given, and we shrink back, our hopes and expectations withered, as by a storm-blast. Again we ask, Why is this?

And yet we do believe that there exists a goodly amount of talent amongst us, which, if fostered and encouraged, would soon place us in the position we have a right, as a profession, to take, and cause us to be, as men wondered at.

We say thus much because we have lying before us several lengthened reports of lectures delivered by members of our profession at the different societies connected with their respective localities, and notices of others. We regret that these reports are so lengthy, for on that account, and that account only, are they excluded from our pages. Gladly would we find room for *condensations of them, if their authors would undertake to make them for us.* We know that they are able to do this better than we are, since they could readily select those points, or divisions, which are of greater interest to the profession than are others. Such an act would be attended with a twofold advantage—the profession would be benefited, and its journal increased in value. It may be that we are chargeable with some degree of selfishness in making this last observation, but we can bear the imputation.

We fear, however, that these aspirants for fame will from many meet with neither commendation nor support. Such approve not of the masses being taught; they are afraid of knowledge being disseminated among them. This is an error, since it is with medicine as with everything else—“a little knowledge is a dangerous thing.” We have known those who, being unacquainted with the anatomy of parts, have performed the most hazardous operations upon animals, and yet such, when somewhat enlightened, have feared to attempt them, and have sought the assistance of those who had made anatomy their study. So with medicines. What recklessness is often here manifested! What trashy compounds administered, from their nature being unknown! Ignorance is always bold, and rushes in heedless of consequences. These soon show themselves, and thus it is that the man of scientific acquirements is in the end sought for by the public, and reaps his reward.

We know of nothing so much calculated to enhance the estimation of the profession as this delivery of lectures. Moreover, it brings a full recompense. The study of the subject awakens thought and research, and the mind becomes stored with facts necessary for its elucidation. Then,

again, there is the consciousness of having done that which is conducive to onward progress, even although the laurel wreath be not won by every aspirant.

We have always been warm advocates for the adoption of all measures that tend to the advancement of knowledge, believing "the mind to be the stature of the man," and knowing that success is generally attendant on the industrious. We again say, Educate, educate, educate! Add instruction to instruction, both within and without the schools. There is no such thing as the mind standing still. It is ever progressing in the acquirement of a knowledge of good or evil. It is better, therefore, that right principles be inculcated than that errors should prevail. The success of a case is always problematical and difficult after empiricism has in vain essayed its cure. Better far that the treatment at the first be sound, and better far that the practitioner of medicine, veterinary or human, should have to do with one conversant with principles than with one who is ignorant of them; since he will be content to listen to suggestions, and will readily acquiesce in the adoption of those plans which are shown to be conducive to the end in view.

We shall rejoice to see the number of those who thus stand prominently forward increase, and heartily do we wish them success.

Possibly we cannot better show the benefits to be derived from "helps to knowledge," its gradual advance, and the good obtainable from it, than by the following quotation from a speech lately delivered by Lord Brougham. Eloquenty he says—"The limited nature of man's faculties precludes the possibility of his ever reaching at once the utmost excellence of which they are capable. Survey the whole circle of the sciences, and trace the history of our own progress in each—you find this to be the universal rule. In chemical philosophy, the dreams of the alchemists prepared the way for the more rational, though erroneous theory of Stahl; and it was by repeated improvements that his errors, so long prevalent, were at length exploded, giving place to the sound doctrine which is now established. The great

discoveries of Black and Priestly, on heat and aeriform fluids, had been preceded by the happy conjectures of Newton, and the experiments of others. Nay, Voltaire had well nigh discovered both the absorption of heat, the constitution of the atmosphere, and the oxidation of metals, and by a few more trials might have ascertained it. Cuvier had been preceded by inquirers who took sound views of fossil osteology; among whom the truly original genius of Hunter fills the foremost place. The inductive system of Bacon had been, at least in its practice, known to his predecessors. Observations, and even experiments, were not unknown to the ancient philosophers, though mingled with gross errors. In early times, almost in the Dark Ages, experimental inquiries had been carried on with success by Friar Bacon, and that method actually recommended in a treatise, as it was two centuries later by Leonardo da Vinci; and at the latter end of the next century Gilbert examined the whole subject of magnetic action entirely by experiments. So that Lord Bacon's claim to be regarded as the father of modern philosophy rests upon the important, the invaluable step, of reducing to a system the method of investigation adopted by those eminent men, generalising it, and extending its application to all matters of contingent truth, exploding the errors, the absurd dogmas, and fantastic subtleties of the ancient schools; above all, confining the subject of our inquiry, and the manner of conducting it, within the limits which our faculties prescribe. Nor is this great law of gradual progress confined to the physical sciences; in the moral it equally governs. Before the foundations of political economy were laid by Hume and Smith, a great step had been made by the French philosophers, disciples of Quesnai; but a nearer approach to sound principles had signalled the labours of Gournay, and those labours had been shared and his doctrines patronised by Turgot, when chief minister. Again, in constitutional policy, see by what slow degrees, from its first rude elements, the attendance of feudal tenants at their lords' court, and the summons of burghers to grant supplies of money, the great discovery of modern times in

the science of practical politics has been effected, the representative scheme which enables States of any extent to enjoy popular government, and allows mixed monarchy to be established, combining freedom with order—a plan pronounced by the statesmen and writers of antiquity to be of hardly possible formation, and wholly impossible continuance. The globe itself, as well as the science of its inhabitants, has been explored according to the law which forbids a sudden and rapid leaping forward, and decrees that each successive step, prepared by the last, shall facilitate the next. Even Columbus followed several successful discoverers on a small scale; and is by some believed to have had, unknown to him, a predecessor in the great exploit by which he pierced the night of ages, and unfolded a new world to the eyes of the old. The arts afford no exception to the general law. Demosthenes had eminent forerunners, Pericles the last. Homer must have had predecessors of great merit, though, doubtless, as far surpassed by him, as Frá Bartolomeo and Pietro Perugino were by Michael Angelo and Raphael. Dante owed much to Virgil; he may be allowed to have owed, through his Latin mentor, not a little to the old Grecian; and Milton had both the orators and the poets of the ancient world for his predecessors and his masters.”

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING, JULY 7, 1859.

The PRESIDENT, W. BURLEY, Esq., in the chair.

PRESENT:—Professors Spooner, Simonds, Morton, and Varnell; Messrs. Field, Robinson, Ernes, Pritchard, Dickens, Silvester, Legrew, Helmore, Moon, Withers, Stockley, Cheesman, and Braby.

The President, in a feeling address, stated that the meeting was convened in consequence of the severe indisposition of their Secretary, which he sincerely hoped was only of a temporary character, and trusted that the Council would adopt

such measures as for a time would relieve him of his official duties.

Professor Spooner explained the nature of the malady under which their respected Secretary was labouring. With the President, he trusted that it may be only of short duration; but as of this there was some doubt, he would suggest that leave of absence be given to him, and that some member of the Council be requested, in the mean time, to act as their secretary.

Mr. Legrew, after expressing his regret at the illness of the Secretary, proposed—

“That *Mr. Braby* be requested to act as secretary for two months.” It, however, appearing, from the sentiments expressed by several members of council, that no definite time should be named, he then “proposed that *Mr. Braby* be requested to act as secretary *pro tem.*”

Mr. Stockley seconded the proposition.

Mr. Field made some kind remarks in reference to the illness of the Secretary, and fully concurred in the proposition.

Mr. Silvester, with the same kindly feeling, supported the motion, which, having been put by the Chairman, was carried *nem. con.*

Mr. E. Braby expressed his willingness, under the painful affliction of their Secretary, to assist him in the performance of his duties as much as laid in his power, and that for an indefinite time. He felt honoured by the confidence placed in him, and, as treasurer, communicated to the meeting the accuracy with which the financial accounts of the College have been kept by their Secretary.

Mr. Field moved, and *Professor Morton* seconded—

“That the condolence and sympathy of the Council be expressed to *Mrs. Gabriel*, by their President.”

Carried unanimously.

For E. N. GABRIEL,

E. BRABY, *Hon. Sec. pro tem.*

Veterinary Jurisprudence.

COURT OF EXCHEQUER, JUNE 14.

(*Sittings in Banco before LORD CHIEF BARON POLLÓCK,
and BARONS MARTIN, BRAMWELL, and WATSON.*)

BLACK *v.* ELLIOTT.

This was an action to recover damages for the loss of 800 sheep, arising from the use of a sheep-dipping composition purchased by the plaintiff of the defendant, who is a chemist and druggist, carrying on business in the North of England. The case was tried at Northumberland at the last spring assizes, before Mr. Justice Willes, when a verdict was returned for the plaintiff. In the subsequent term Mr. Atherton, for the plaintiff, obtained a rule calling upon the plaintiff to show cause why the verdict should not be set aside and a new trial had. The rule came on for argument yesterday, and was resumed this morning. After hearing the arguments of the learned counsel on both sides, the Court discharged the rule.

BRISTOL COUNTY COURT (JURY CASE).

(*Before SIR J. E. EARDLEY WILMOT, BART., Judge.*)

WITHERS *v.* WHITE.

Mr. G. L. King appeared for the plaintiff; and Mr. Slack, of Bath, for the defendant.

Mr. King said the plaintiff, William Withers, was a horse-dealer, at St. George's, and the defendant, George White, a farrier at Bath, and the action was brought to recover £16 6s., being the amount of loss which the plaintiff had sustained through a breach of warranty of a horse. The horse was purchased by the plaintiff on the 23d of September last, in Bristol Market, of the defendant, who warranted him sound. He (Mr. King) should distinctly prove the warranty, and he should have no difficulty in showing the breach. Mr. Kent, the veterinary surgeon, who must be well known to them all, was called to examine the horse on the 1st January, and he would tell them that at that time the animal was suffering from a malady which must have been of long standing—of at least twelve months' duration. The principal disease under which he suffered was one of the hocks, and they would hear Mr. Kent, who would illustrate his evidence by some bones which he had in his pocket (laughter), describe to them the nature and consequences of the malady. They would also hear that the horse was suffering from poll disease, and that there was at least twelve ounces of fluid suffused in the poll. The horse, at the time, was not suffering from any acute inflammation, but they would learn from Mr. Kent that if fresh inflammation came on, the fluid would produce caries, or rottenness of the

bone, which would finally enter the spinal marrow and destroy life. They were now in the month of March, and doubtless the jury would hear from Mr. Slack some remarks upon the circumstances of the action not having been brought before ; but the fact was, the plaintiff did not actually know at the time where Mr. White resided, and it was not till he had made inquiries at Bath that he was informed on that point. The plaintiff, after he bought the horse, sold it to another person, by whom it was afterwards returned. On its being sold at the Repository it only fetched £9 10s. The difference between the price paid and that realised, together with the expenses of keep, of the examination by Mr. Kent, Mr. Bryant's commission, &c., made up the sum sued for. Mr. King called the following evidence :

William Withers, the plaintiff, deposed to having purchased the horse last autumn of the defendant at the Bristol Cattle Market ; defendant asked £20 for it, and said he would warrant it sound and good in harness ; witness objected to the price, and they ultimately agreed for £17 10s. ; sold the horse to a cattle-grazier named Charles Millan, and in a week or so he sent to say that he was unsound ; witness had warranted the horse, and he requested Millan to keep him for him, and turn him out until he could find out the man from whom he had bought him ; witness gave back the money he had received, and took back the horse, which he afterwards had examined by Mr. Kent, and subsequently caused to be sold at the Repository by Mr. Bryant, who got £9 10s. for him.

Cross-examined—Have been a horse-dealer all my life, and my father was before me ; have bought numbers of horses ; when first I offered for him I might have bid £14, £15, or £16 ; did not examine the horse particularly ; was satisfied with the warranty ; don't recollect that I tried to sell the horse in the same market.

Mr. Slack—Now, then, did you apply any ginger to the horse ?

Plaintiff (scratching his head)—Well, perhaps I did, and perhaps I didn't.

Mr. Slack—Well, that is a very safe answer. Did you do so ?

Plaintiff—I don't think that I did, but if I did it was no more than my duty to do so (a laugh).

Cross-examination continued—I don't know that Mr. White pointed to a farmer in the fair and said, " That is the man whose horse it is."

Job Cribb, horse-dealer, who was present at the deal, confirmed plaintiff's statement as to the warranty. Defendant said, " I'll warrant the horse sound, and a good horse in harness."

Cross-examined—I did not examine the horse ; I might or might not have bid for the horse.

Samuel Cozens, farmer, of St. George's, was also present when the horse was sold, and confirmed the warranty.

Upon cross-examination he said he could not say whether or not a written warranty was asked for.

Mr. John Kent, veterinary surgeon, deposed to the examination of the horse on the 1st of January. The horse was suffering from disease of both hocks, of both fetlock-joints, and of the poll. The bones of the hocks were diseased (the witness handed in some diseased bones to explain the nature of the ailment). The effect of the disease of the hocks and fetlocks was lameness. As to the poll, there had been at some time active inflammation near the bone, and effusion had taken place between the first two bones of the neck to the extent of ten or twelve ounces of fluid. The disease must have been of some months' duration ; it might

have been of two or three years. Had the horse met with violence to the neck, renewed inflammation, or even a bad cold, the disease of the poll would have become active, and death might have ensued.

Cross-examined—I often appear in this box, and shall not object to the pleasure of meeting you at any time (laughter); am well known as a veterinary surgeon, and as well known in London as here; the three bones of the horse's hocks had grown together; the tendency with such a disease would be to lameness; an old-standing horse-dealer might be deceived, especially if the horse was put under the whip or under ginger; he might be deceived even when the horse was walking; such an effusion as I found in the poll of the horse could not have been produced within a few weeks.

Mr. Frank Bryant proved the sale of the horse for £9 10s. at the repository.

Cross-examined—It was sold as a horse in dispute, not as being unsound; it was trotted up and down, but I did not notice whether it was lame; if I had I should not have mentioned it there, as it was my business to get the most I could for it.

Mr. Slack, before proceeding to address the Court on the general facts, called attention to the case of *Carwell v. Coare*, 1 Taunton, 566, in which it was held that where, on a breach of warranty, a horse was not returned or tendered to the vendor, the measure of damages must be the difference between the price given and the sum realised, and nothing could be recovered for the keep. The reason of the ruling was shortly given by one of the judges thus, "If a man buys a horse it is his own, and if it is his own he must keep it."

His Honour said the judgment was no doubt intended to force persons to tender the horse, as the vendor would then have an opportunity of seeing it, and of determining what he would do with it.

Mr. King said he could not resist the authority of the case cited, and must of course forego the £6 15s. claimed for keep. He was not consulted in the matter until yesterday, or he should have advised against that sum being mentioned in the bill of particulars.

Mr. Slack ably addressed the jury for the defence, contending that the action was a horse-dealer's manoeuvre, and expressing his belief that when they had heard all the facts they would have no difficulty in returning a verdict for the defendant. He asked the jury whether they would believe the evidence as to the warranty, and whether they did not think that if one had been required and given, it would have been in writing. As for the alleged unsoundness, he thought the evidence anything but satisfactory. *Mr. Kent*, who, somehow or other, was in every horse cause, pulled from his pocket the old bones of one of the patients which, notwithstanding his very scientific treatment, had died under his hands, and they were to assume, because he chose boldly to aver it, that the bones of the horse in question had grown together. That, he thought, was carrying matters too far. The learned advocate said he should show that the horse, which belonged to *Mr. Pinchin*, a highly-respectable farmer and brewer at Box, had always been considered sound, and was only parted with as being too light to carry a man of *Mr. Pinchin's* weight over a heavy farm. He should prove that no warranty was given, that the plaintiff, who was an experienced dealer, bought the horse on view, and he had no sooner paid for him than, horse-dealer like, he gingered him and tried to sell him in the same market. He should also show that *Mr. White* acted merely as agent to *Mr. Pinchin*, and that he so stated to *Mr. Withers*, and pointed out *Mr. Pinchin* to him. *Mr. Slack* submitted to his Honour, upon the authority of cases,

that under such circumstances Mr. White could no more be held liable than the mere servant who trotted the horse out. He called

Mr. White, the defendant, who deposed that he was employed by Mr. Pinchin to sell the horse in question, and attended the Bristol market for that purpose; had no interest in the horse himself; asked £20 for him; told the plaintiff that the horse was sold because he was not of sufficient weight to carry a gentleman about a hilly farm, and added that he had seen him at work; plaintiff said he had been looking him over, and offered £15 for him; witness said he might as well have offered him 15s., and moved away; Withers afterwards came to him again, and followed him up until they finally dealt. The witness denied having given any warranty, and said plaintiff tried the horse himself; he also told plaintiff that he was only selling the horse for Mr. Pinchin, whom he pointed out to him in the market, and who came up to them; the agreement for the sale of the horse was made before they entered the house.

William Rogers, servant to the last witness, deposed to having been present at the deal, which he fixed as having taken place in the house. Nothing was said about a warranty before the money was paid; afterwards Mr. White did say the horse was all right.

Mr. Pinchin, farmer and brewer, of Box, proved that he was the owner of the horse in question, which he had had from October, 1857; the horse worked about very well, but was not strong enough for him; he was never lame, and he was not aware that his hock was grown together, or that he had a lot of fluid in his poll; Mr. White sold the horse as witness's agent; heard White say to Mr. Withers, "Here is the gentleman that belongs to the horse."

Cross-examined—I believe that the horse was perfectly sound.

Mr. King—And I dare say believe so now?

Mr. Pinchin—Well, I do.

Mr. King then replied on the defendant's case, contending that it had failed to overturn that of the plaintiff. He submitted as to the warranty that the jury could not disbelieve the testimony of a perfectly disinterested witness like Mr. Cozens, and argued that, believing as Mr. Pinchin and Mr. White admitted they did, that the horse was thoroughly sound, there was no reason why they should not have warranted it.

The learned Judge summed up the evidence with great care, and the jury returned a verdict for the plaintiff for £9 11s., the amount sued for, less the charge for keep.

BATH COUNTY COURT.—FRIDAY, MAY 27.

(*Before C. F. D. CAILLARD, Esq., Judge.*)

BENJAMIN PHINEAS NUNES v. WM. POWELL.

THE plaintiff is a gentleman residing on Sion Hill, and the defendant a fly-owner of this city. The action was brought to recover £25, for "damages sustained by the plaintiff in this, that is to say, for that on or about the 23d day of April, 1859, the defendant sold to the plaintiff for the price of £22, a chestnut horse, and warranted the same sound, free from vice, and quiet to ride or drive in harness, and relying on the said

warranty, the plaintiff paid the defendant the sum of £22; but the defendant deceived the plaintiff, for that the said horse was not sound, therefore, the plaintiff tendered back the said horse to the defendant, who refused to receive the same, or pay back the purchase-money, and the plaintiff hath also sustained divers expenses, in consequence of the premises; and for money had and received, on an account stated.”—Mr. Slack appeared for the plaintiff, and Mr. T. W. Saunders, barrister, of the Western Circuit, instructed by Mr. E. M. Harris, for the defendant.

Mr. Slack, in stating the case to the Court, said that the plaintiff was a gentleman who had several horses, and about the 23d April he purchased the animal in question of the defendant. He was very particular to have the horse warranted, and drew up the warranty himself, stipulating that it should be signed by the defendant, otherwise he would have nothing to do with the transaction, not being much of a judge of horses himself, and the defendant admitting that he had only recently had it from Ireland, and had had but few opportunities of testing its capabilities. The defendant accordingly signed the warranty, in which he affirmed that the horse was free from vice, and quiet to ride or drive in harness. When his Honour heard that within about twenty-one days after the sale it became necessary, under the advice of experienced veterinary surgeons, that the animal should be shot, he would not be surprised when he (Mr Slack) said, that instead of being sound the animal was in a very unsound state, quite different from the character the warranty led them to expect. The question of course was, whether the animal became diseased afterwards, or whether unsoundness existed at the time of sale. In the present instance the unsoundness assumed a complicated form. The horse at first went off its food; then divers swellings made their appearance, which turned into ulcers. The horse was also afflicted with farcy, and from the appearance of this disease it was quite palpable to the veterinary surgeons that its seeds had existed some considerable time, at all events before the sale was effected. His Honour would hear that this farcy was a modified form of that horrible disease the glanders. In its advanced stages this disease was incurable; but on its first appearance the attempts to cure it might be successful. When this glaring unsoundness appeared, Mr. Nunes had advice, and under that advice the horse was offered back to the plaintiff, who refused to take it. Then it became the duty of the plaintiff either, in the ordinary way, to sell the horse in the market, in order to show in an action for breach of warranty what loss he had sustained, or have the animal shot. Acting under his (Mr. Slack's) advice, an auctioneer was instructed to sell the animal. Mr. Eve was the person selected, a very respectable and talented man, who during the greater part of his life had been a chemist and druggist, devoting much of his time to the veterinary art. Probably he was as good an authority as the city of Bath possessed, as to the diseases which horses were subject to. Mr. Eve looked the animal over, and observing the state it was in, actually refused to sell it, giving an undoubted opinion that the animal was in that state of farcy that to sell it would be an imposition on the public, and would be attended with dangerous consequences. Then came the question—what was to be done with it? The veterinary surgeons were of opinion that it was unsafe, and that it ought to be shot. Thinking that if the animal was worth anything at all the defendant ought to have an opportunity of realising it, they gave him notice in writing that unless it was taken away by the following morning at 10 o'clock, it would be shot. The defendant declined to do so, and the animal was shot. Upon its being examined by several persons, who would be

adduced, it was found that the lungs were tuberculated, which, when present in conjunction with farcy, induced the veterinary surgeons to believe that the latter disease was in this case incurable. There were other diseases, such as bog spavin, and bone spavin; and he therefore apprehended that if his Honour was satisfied that the circumstances of the case were as he (Mr. Slack) had described them, he would rule that they were entitled to the full amount of damage, having bought a horse which was perfectly worthless.

Amos Lovett, groom to the plaintiff, was then called to prove the various diseases which manifested themselves in the horse after the purchase.

George Snell, who assisted the last witness in taking care of the animal, gave similar testimony.

The plaintiff was afterwards examined, and recapitulated the facts detailed by Mr. Slack in his opening.

Mr. Thomas Dyke Broad, veterinary surgeon, was the next witness, and deposed as follows:—I have been in practice for nearly twenty years, and have under my care about 1000 horses a year; on the 10th instant I saw the horse in question at plaintiff's stables; I slightly looked it over there, and in consequence of what I saw it was brought down to my place for further examination. I examined it and found it had farcy, accompanied with symptoms of approaching glanders. I found large bog spavins, and disease in the bones of the hock. I coughed him, and from the sound and the general appearance of the animal, I was of opinion that it had tuberculated lungs: that was on the 11th of May. I considered that the farcy was not curable, and I advised the plaintiff that it was likely to be infectious to man or animal. I considered it would be improper to offer it for sale in the market, and I said it was no use to keep it, as it could not recover by treatment; in the course of my experience I have seen hundreds of cases of farcied horses; I should say that this horse was entirely incurable; the horse was taken to Sargent's yard to be shot. I saw the defendant at the post-mortem examination. Mr. Barker was also there, and the two Sargents, together with my son. I examined the body and lungs, and found they were tuberculated, besides having several abscesses. It frequently happens that the lungs are affected in one part and not in another; it was the case in this instance. The opinion I had formed before the animal was slaughtered was confirmed by the evidence of the post-mortem examination. I should say that the disease of the lungs must have been of some weeks' standing. I heard that the horse was purchased on the 25th of April; it must have been diseased at that time; the bones of the leg were also diseased. Farcy is generally confined to the skin; it is considered a modified form of glanders.

Cross-examined—Farcy may proceed from the breaking up of the constitution, but in this case it proceeded from pulmonary consumption; its symptoms are the formation of pustules over the body, several of which were on the animal in question. I pledge my professional reputation that this was a case of farcy; a farcied horse may work when the disease is local and not general; had there been no appearance of farcy, I should have rejected the horse from his having unsound lungs. This was an incurable case of farcy, with symptoms of glanders. I heard that Mr. Nunes had bought the horse a fortnight before as a sound one; and on the 11th of May I nevertheless pronounced it incurable; there is no disease to which horses are subject that is similar in appearance to farcy.

Re-examined—I did not think that such a horse ought to live. I

would not have administered medicines to it, nor would I have allowed my men to do it, having seen the danger of it, more particularly of late years.

Mr. H. Eve proved being applied to by *Mr. Slack* to sell the horse on the 10th of May. On the 11th he went and looked at the horse in an empty coach-house belonging to *Mr. Weller*; the animal was in a very emaciated state, evidently suffering from disease. He at once resolved not to sell the animal, because he knew it was suffering from farcy, and that it ought not to be kept alive. He knew from his experience that the horse must have had the disease in an incipient state for not less than three weeks. He had since seen the lungs of the horse, and their appearance confirmed his former opinion; tubercular disease sometimes developed itself in one part of the lungs and not another; in this instance the disease of farcy was incurable.

Mr. Broad, a veterinary surgeon, practising in London, deposed that he had examined the lungs in question, and found them tuberculated. He had a very large practice, and from what he had heard he thought the horse ought to have been shot; he was veterinary surgeon to the London Omnibus Company, from which he derived large practice; there could be no doubt that the horse had farcy, and he fully agreed with the treatment it had received.

Mr. Burrell, veterinary surgeon, of Keynsham, gave corroborative testimony; and *Mr. Sargent*, of Holloway, who shot the horse, and his son, were likewise called, after which

Mr. Saunders submitted the case for the defence, stating that the defendant bought the horse at Chippenham, of a *Mr. Mackey*, a horse-dealer. He received no warranty with it. Within two days after *Mr. Weller* told him that the plaintiff required such a horse, and on the latter seeing it he offered to purchase it without a trial, though the defendant wished him to take it on trial for a week. The plaintiff, however, expressed himself quite satisfied with the account he had received of the horse from *Mr. Weller*. The horse was then sold, and the plaintiff subsequently came to defendant's house on the same day, and brought the warranty written out, and combining with it a receipt for the money. On the face of the evidence, it would seem that there was a warranty given, but the circumstances under which that document was obtained would show that it was not a warranty. Immediately on its being read over, defendant objected to sign it, on the ground that he would not warrant the horse, not having received a warranty with it. It was then understood that the defendant should sign the paper merely as a receipt, and accordingly the receipt was signed. In fact, the defendant did not want to sell the horse. The plaintiff came to him; he did not seek the plaintiff. He (*Mr. Saunders*) should further be able to show that the horse was not labouring from farcy, and that the disease spoken of was merely an eruption produced by stuffing the animal, which was previously very poor. Moreover, he should be able to show that those diseased appearances did not necessarily owe their origin to any period anterior to the time the horse was sold, and that they might have been easily cured. He thought, therefore, his Honour, when he had heard the evidence, would come to the conclusion, that the claim set up on the part of the plaintiff was not founded in justice.

The Defendant corroborated the statement of *Mr. Saunders*, adding, that he was so convinced that the animal was not suffering from farcy, but only from a slight eruption, that the day before it was shot he told *Sargent* he would rather return all the money, than that the animal

should be killed. In cross-examination he stated, that he gave £13 for the horse, two days before he sold it to the plaintiff.

The daughter of the defendant, and Thomas Oram, in the employ of the latter, both proved hearing the defendant object to give a warranty.

Mr. Weller, livery-stable keeper, who introduced the defendant to plaintiff, stated that the horse was in his stable; that there was no sign of any disease about the horse when it was sold, and that the disease from which it was subsequently suffering was merely a skin eruption. He saw the horse when it was going to be shot, and thought there was no reason at all for killing it. He had had many horses in a worse state cured by proper treatment. It was high living that led to the breaking out. Had the horse been afflicted with farcy it would have communicated the contagion to the other horses in the same stable.

Thomas Collier, examined—I am a farrier. I knew the pony in question at the time it was sold to Powell. I saw nothing the matter with it, except that it was in poor condition. Mr. Nunes' groom asked me to look at the pony; Mr. Nunes was present. I said I thought it was brought on by high living. I have not seen many cases of farcy. I gave the horse physic—it acted well. I saw the horse a day or two after. I saw ulcers on the head and thigh. I saw the horse on the 12th of May with Mr. Barker. I did not think it farcied, neither did Mr. Barker. I think it might have been cured. On the 12th May I saw Mr. Slack, and showed him Mr. Barker's certificate.

Cross-examined—I observed a bog spavin on the horse's leg. I have not been in business four years. I never had a farcied horse to attend to during that time. I did not say in the presence of Loves and Snell that this horse had a slight touch of farcy.

Mr. Barker, examined—I am a veterinary surgeon of Bath. I was requested the night before the 12th May to examine the pony. I found the horse in very low condition, but his eyes and skin looked well and there was no running at the nose. There was a sore on the off side of the head and one on the off stifle, and several more coming. There was none on the inside of the thigh. I have been in Bath two years and a half. I have not seen many cases of farcy in Bath. I saw many in Birmingham. I think the sores arose from high feeding upon a poor condition. It was not farcy. I was told the horse had a strong dose of physic which drove it out of the system. I offered two sovereigns for the horse on spec, to cure it myself. I saw it pass by my place the night it was killed. It trotted sound. I told Sargent it was a pity to kill it. I followed after it in a quarter of an hour. It must have been trotted up. I gave this certificate [certificate of Mr. Barker read, in which he stated his opinion that the horse was not suffering from true farcy]. I saw the lungs of the horse at Sargent's. It was nearly dark. Mr. Broad said, "It is just as I expected, the horse would have been glandered in a few days." Farcy may exist without diseased lungs. There were no tubercles, nothing but some seedy lumps.

Cross-examined—I have not in two years and a-half seen a case of farcy. I was apprenticed at Birmingham. I was in Yorkshire three months—probably I did see a case of farcy there. I saw cases at Birmingham; one at Mr. Page's, Bell Street; also one at Bretherton's, coach-proprietors. My master attended these cases, and I went by his directions.

By Mr. Slack—What do you mean by stating in your certificate that this was not true farcy?

A. I mean not a true case. I mean some disease not farcy at all. I did not think the horse had farcy. The running sore below the ear was

in a dirty state covered with straw. It was rather spread. It was not in a state of chancre. I will not swear this. I will not swear that the sore on the thigh was not a chancre. It was an abscess, but I don't know whether a chancre is. I don't know what a chancre is. There were one or two ulcers round the belly. I did not cough the horse. I did not see any matter scraped off the lungs by Sargent. It was dark, and I could not see. It was after seven when the horse passed my place. We got there in a quarter of an hour. It took twenty minutes to skin the horse and take out its lungs.

By Mr. Slack—Do you mean to swear that it was dark at twenty minutes to 8 o'clock on the 13th of May? Did Mr. Broad say that the disease existed at the time of purchase, and did you thereupon say "I admit that?"

I did not. I have no recollection of saying so, but I won't swear that I did not.

Re-examined—There was no reason for my saying so. It was dark. I never heard these ulcers called chancres before.

Mr. Kent—I am a veterinary surgeon residing at Bristol, and have been in practice ever since 1813. I have seen farcy many years ago, but not lately, in Bristol. I received the head and part of the lungs from Mr. Leigh. Simple farcy does not affect the lungs—glanders does. Diseased lungs may exist without farcy or glanders. If the lungs become diseased it is from glanders. The smell from the running at the nose might have arisen from a common cold. I have not heard evidence enough to prove farcy. The evidence has not proved that the swellings were farcy buds. A change in diet would not produce such ulcers as this horse had. The ulcers might have appeared from any common cause—as a cold. Bog or blood spavin might be created in an hour. I am not satisfied that there was bone spavin. [Mr. Broad here put into Mr. Kent's hands some of the hock-bones of the horse.] I admit that this is bone spavin. This disease must have existed for the last year or two.

Cross-examined—I should have been better satisfied if I had seen the horse alive. I could not have given a direct opinion if I had seen it alive. It was a premature act to kill it. I should have been able to form an opinion as to whether it ought to be killed if I had seen it. The knots on the skin might have arisen from other causes than farcy. I am not acquainted with any books in which the word chancre is used. [Mr. Slack here read from White's treatise on 'Veterinary Medicine,' which he said was published in 1807, as follows: "If glanderous matter or the matter taken from a farcy ulcer be applied to the skin where the cuticle has been torn or abraded a chancre or foul ulcer is produced." Mr. Slack also stated that in Percivall's modern work on 'Farcy' the word was used.] I have not attended a horse with farcy for a year or two.

Mr. Kent stated that a horse was pronounced to be glandered at the Veterinary College two years since, and, subsequently, examined by six veterinary surgeons and pronounced to be free from the disease, and was at the present time working in London; upon which *Mr. Broad* stood up and stated to the Court that the case to which Mr. Kent referred occurred only about November last, and it had since been proved that the opinion given at the College was a correct one.

Re-examined—Farcy is not now very prevalent, in consequence of improved treatment of horses.

Mr. Nathaniel Leigh—I am a veterinary surgeon of Bristol. I examined a portion of the lungs of the horse in question, and found it in

a healthy condition. I don't think it had farcy. I never heard the word chancre used with reference to a horse. I have had a great deal of experience. I have had cases lately.

Cross-examined—Mr. Kent is not connected with the coaching business. I attend ninety-seven coach-horses. I have attended more than four cases of farcy in the last twelvemonth. Generally, an abscess comes in the inner part of the leg and the side of the face in farcy cases. There is no other symptom. Farcy buds first appear, and then become ulcers. I call them pimples not buds. The disease increases more rapidly in some horses than others. The disease farcy is not a mild form of glanders. It is a different and distinct disease altogether.

Mr. Slack—Then you differ from the books in this respect also. Mr. Slack read as follows from White's treatise: "The most common cause of farcy appears to be 'contagion either from a glandered or farcied horse;' for there can be no doubt that these diseases will reciprocally produce each other; whence we may conclude that they both originate from the same poison, which produces different effects according to the parts on which its noxious influence is felt."

His Honour summed up, observing that the defendant virtually gave a warranty, however much he might contend that he intended it merely as a receipt; and having commented on the fact that Mr. Kent and Mr. Leigh only saw a part of the lungs, and the head after the skin had been removed, whereas Mr. Broad had seen the horse several times during life, gave judgment for the plaintiff for the full amount, £25.

The case lasted six hours.

ON THE POISON WHICH IS DEVELOPED IN MEATS AND SAUSAGES.

CRITICAL CONSIDERATIONS ON THE VARIOUS HYPOTHESES RELATIVE TO THE NATURE OF THIS POISONOUS PRINCIPLE, WITH THE ANNOUNCEMENT OF A NEW THEORY OF ITS TRUE ESSENCE.

By M. E. VAN DEN CORPUT.

[WE are induced to give insertion to the following paper, which appeared some little time since in *The Chemist*, from having in our number for March last stated that organic matters undergoing change, and which too often find their way into the food given to pigs, frequently prove poisonous.]

If it is indisputable that the immense progress made in the last few years by the sciences of investigation, have elucidated many facts previously unexplained, it is no less true that several points still seem to elude all rational explanation.

Of this number is the unknown poison which, especially in certain circumstances, has given rise to many symptoms which have been set up after the swallowing of smoked sausages or meats, concerning which the utter want of positive knowledge admits only of our forming suppositions.

The fearful number of poisonings of this kind which have been observed in Germany, whilst awakening the attention of the authorities, led to researches by men of science who for some years have given the most contradictory hypotheses on this subject; but none of the scientific men who have investigated this subject, have yet been able to isolate the poison, or to form, as regards its nature, anything but purely speculative theories.

The importance of this subject, and the interest which it presents in so many aspects, have led us to offer, in our turn, on this very abstract question, some considerations resulting from the collection of certain little-known facts, and which have appeared to us of a nature to merit attention in a general, as well as in a scientific point of view.

We regret only that the impossibility under which we have at present laboured, of procuring the poisonous substance under consideration, has prevented us from verifying experimentally the theory which an imposing synthesis of proofs henceforth acquired to science authorises us, however, in establishing as logically demonstrated.

It is in Wurtemberg, and especially in Suabia, that accidents of this kind have been most frequently observed, and according to an official return, the number of individuals poisoned by sausages has amounted, in 50 years, in Wurtemberg alone, to more than 400, of whom 150 died.

The first observations relative to this poison (*Wurstgift-Toxicum botulinum*), are to be found in the *Acta Physico-Medic. Colleg. Medic. Onoldini*, of 1735.

Afterwards, Kopp, Kuhn, Horn, Dann, Berndt, Thru-chsess, and some others, relate a considerable number of cases of poisoning of the same kind.

Dr. Kerner, to whom we owe the first researches on the nature of the poison of meats and poisonous sausages, collected 135 cases of poisoning of this kind, observed from 1793 to 1822, and of this number, 84 were fatal.

A distinguished practitioner of Wurtemberg, Dr. Weiss, collected in the space of eight months, 19 similar cases of poisoning observed by him, 6 of which died.

Cadet de Gassicourt likewise relates, in the *Journal de Pharmacie*, several cases of poisoning by decayed sausages.

Quite recently, also, MM. Deutsch and Engelken, have noticed several new similar examples.

We may here mention one thing worthy of remark, of which we shall show the importance in speaking of the indications which have led us to the toxicological etiology of poisoning by poisonous sausages; this is the singular cir-

cumstance that of these numerous cases of poisoning, 40 per cent. were observed in the month of April, and the others in nearly equal numbers at various periods of the year; whence it results, that it is principally in spring that these symptoms are produced.

The principal symptoms which characterise the poisoning in general supervene from twelve to twenty-four hours after eating the poisonous meats.

They manifest themselves by profound oppression, sharp pains in the stomach accompanied by nausea, vomiting and ardent thirst. There is at the same time diminution and irregularity of the pulse, coldness of the extremities; then supervene lypothemia, syncope, a considerable diminution of tactile sensibility, amblyopia, paralysis of the muscles of the pharynx and of the eyelids, ischnophonia, phenomena to which are sometimes added a croupy cough, and a peculiar dryness of all the mucous membranes.

The symptoms observed during life, especially when they are taken in connexion with the results furnished by post-mortem examination, show that this poison exerts its action particularly on the ganglionic nervous system, rather than by acting as a septic alterant on the constitution, as one of the most illustrious scientific notabilities of our age has supposed.

As regards the therapeutical agents resorted to for combating the terrible effects of this poison, there have been used by turns, but without much success, emeto-cathartics, antiphlogistics, narcotics, chlorinated water, spirits, astringents, acids, alkalis, and, as special counter-poisons, the polysulphuret of potassium, recommended by Kerner; belladonna and wine, extolled by Paulus and Kopp; and, finally, phosphuretted oil, employed by Schumann; but, in most serious cases, death has nevertheless been the fatal termination of the symptoms.

(To be continued.)

ARMY APPOINTMENTS.

From the 'London Gazette' of Friday, July 8th, 1859.

VETERINARY MEDICAL DEPARTMENT.

John Mills, gent., *vice* Hart, appointed to the 2d Dragoons.

Henry Dunsford, gent., *vice* Lambert, appointed to the Royal Artillery.

OBITUARY.

Died, at Tunbridge Wells, on the 12th of June, 1859, aged 45 years, Jacob Bell, Esq., the President of the Pharmaceutical Society, and Editor and Proprietor of the *Pharmaceutical Journal*. Although not a member of our profession, we record the death of Mr. Bell with sincere regret. In him the "Pharmaceutical Society of Great Britain" has, we fear, sustained an irreparable loss. During his life, he did more to raise the position of chemists and druggists than any other man. We were personally acquainted with him, and have often heard him express an earnest solicitude for our progress. With him we exchanged journals, and frequently our pages have been enriched by the labours of his pen, since there existed between us, if not a oneness of interests, a reciprocity of feeling arising from the similarity of our professional pursuits and sentiments. In the last number of the *Pharmaceutical Journal* are the following observations:

"Mr. Bell's health had been long declining. His naturally active disposition, and the enthusiasm with which he engaged in many public pursuits, caused him to overtax his physical powers, and thus was laid the foundation of a distressing complaint which deprived him of his voice, and rendered the act of deglutition a source of extreme suffering. Throughout life he had manifested a remarkable disregard of his own personal ease and comfort, especially when business of importance claimed his attention, and this, which almost amounted to a reckless neglect of the requirements of nature, was continued long after the commencement, and no doubt contributed to the aggravation, of his illness. His mental powers remaining unimpaired, and the disease, *laryngeal phthisis*, chiefly affecting the organs of voice, he continued to exercise his pen with unabated energy, when he could no longer take part in public discussions. * * * Distressed with hectic cough, feeble and emaciated to the last degree, and deprived, almost wholly, of the power of receiving nourishment in consequence of the agony attending the act of swallowing, he calmly applied himself to the preparations for his death. One of his last acts was the assignment of the copyright of this Journal to the Society at whose rise it was commenced, with whose progress it has been intimately associated, and in the interest of which it has ever been conducted. For some weeks before his death he resided at Tunbridge Wells, and there he fixed upon a spot for his last resting-place, beside the grave of the late Dr. Golding Bird. Having occasion to apply to the minister of the parish on this subject, he unexpectedly found in that gentleman an associate of his boyhood, the renewal of whose acquaintance contributed to render his last hours those of Christian peace, and assurance in a happy change. The instructions he left for his funeral were consistent with his unostentatious deportment through life. Small was the parade of ceremony, and few the followers to his grave; yet he had many true mourners, and of these not a few gave public expression to their feelings by partially closing their shops. This was especially the case among our Members in

London, and, we believe, in most parts of the country. The council and officers of the Pharmaceutical Society were among those who attended, though uninvited, at the grave. They could not be restrained from thus following the last earthly track of him with whom they had so long laboured harmoniously, and to whom they were accustomed to look as to one capable of fulfilling the parts both of counsellor and leader."

Mr. Bell was a warm patron of the fine arts, and has nobly left to the nation all his best paintings, untrammelled by any conditions.

Died, on the morning of Tuesday June 28th, Mr. James Hudson, the late Secretary of the "Royal Agricultural Society of England."

"Mr. Hudson had been seriously indisposed for a considerable time, and was known of late to have been gradually sinking. He was in the fifty-fifth year of his age. Mr. Hudson succeeded the late Mr. William Shaw, as Secretary of the Royal Agricultural Society, in the year after the opening meeting at Oxford in 1839. He entered upon the duties of this appointment with the highest testimonials in his favour, having previously held for nine years the office of assistant-secretary and librarian to the Royal Society at a salary of three hundred per annum. He withdrew from the Royal Society in November, 1834, having during the year previous received the public thanks of that Society, accompanied by a present of twenty guineas, 'for the able manner in which he drew up the report on the adjudication of the Society's medals.' He is still well remembered and spoken of by the Fellows as a very efficient officer. It will be seen from this that the Council of the Royal Agricultural Society were thoroughly justified in the selection they made, and for many years their expectations were amply realised. Mr. Hudson quite sustained his character as an efficient officer, and until very lately no man could be more respected. Indeed the recent proceedings were such as to utterly astound many of his friends, although it was known to some that he had long been in difficulties. An effort, in fact, was made, we are told, a year or two since, to save him; but from something like a positive disinclination on his own part, it was not proceeded with. He leaves a widow and a very large family."

Truly our stay in this world, when the longest, is only a little while. Rightly has it been asked, "Are not the sands of time always running out? Does not death ever shoulder life in this sad world? Tread not the feet of those who bear the corpse, on the heels of the guests who are hastening to the wedding?" Yet—

"Weep not for Death,
'Tis but a fever still'd,
A pain suppress'd, a fear at rest,
A solemn hope fulfill'd.
The moonshine on the slumbering deep
Is scarcely calmer.—Wherefore weep?"

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Communications and Cases.

LOSS OF THE HOOF OF A MARE FROM THE
LEG HAVING BEEN STRAPPED UP TO
SUBDUE VICIOUSNESS.

Communicated by B. CARTLEDGE, M.R.C.V.S., Sheffield.

DEAR SIRs,—It may be well to inform the readers of your journal, and through it the public generally, of a danger that is incurred in carrying out to *too great an extent* the system of subduing vicious horses, introduced by Mr. Rarey.

A fortnight ago a mare, belonging to a gentleman in this neighbourhood, became so unmanageable as to induce him to place her in the hands of a breaker. The near fore leg was with some difficulty strapped up, in the manner adopted by Mr. Rarey, and the mare was left in that position for rather more than *forty-eight* hours. At the end of that time the breaker could, without fear of injury, approach her in her box and lead her round it; but the leg which had been strapped up was observed to be swollen both above and below the knee, and the mare was slightly lame. Walking exercise was, however, given in the breaker's yard daily, without any apparent increase of either the lameness or the swelling, and with the exception of what was described to me as "a sweating" around the coronet, nothing further was observed.

To-day (Aug. 22d)—exactly a week since the mare was put into the breaker's hands—she was found in her box *with the near fore foot hoofless*. The hoof, with the shoe on it, was lying just within the door, and the animal was feeding as usual at the manger. My attendance was at once requested, and by my advice the mare has been destroyed, as I found that already

the vascular structures at the toe of the pedal bone had been completely worn away by the friction on the ground.

I am, Gentlemen,

Yours very faithfully.

To the Editors of the 'Veterinarian.'

FRACTURE OF THE CARPUS OF A MARE.

By J. B. HENDERSON, M.R.C.V.S., London.

ON July 3d, an aged brown mare, three parts bred, was placed under my care for treatment, in consequence of being very lame of the near fore leg. She was suffering intense pain, and the knee-joint was much swollen. Although there was a mark of an abrasion of the skin, which had apparently existed for some time, it was nevertheless my opinion that the lameness, &c., arose from recent injury. The scar inclined to the outer side of the knee, whereas the swelling was most prominent on the inner side of the joint.

I was informed that since the lameness the limb had been constantly fomented and the knee poulticed, and that the mare had been kept on a low diet. Upon inquiring as to the cause of the swelling, I learned that three days since she was ridden by her owner, rather a heavy man, a long distance on the road, and had been galloped part of the way. She performed the journey very well until she arrived at Hyde Park Corner, about a mile and a half from home, when she suddenly became so lame that the owner was obliged to dismount and lead her the rest of the way.

On a careful examination of the joint I came to the conclusion that there was a fracture, and spoke of the propriety of having the mare destroyed. My diagnosis took the owner by surprise and I consented to wait a few days before giving a positive opinion, and especially as it did not appear to be a case of ordinary fracture of the carpus, *namely*, involving the process of the metacarpal bone, which gives insertion to the extensor tendons.

I must confess too that I became less positive of the correctness of my diagnosis, when I compared the crepitation of the injured knee with several healthy ones; for under any circumstances, the motion of the bones, one upon the other, may be heard when manipulating the knee of a horse.

As there was a doubt concerning the precise nature of the

injury, the next day I asked the opinion of another veterinary surgeon, who also thought that the symptoms of fracture were not sufficiently marked to warrant the animal being forthwith destroyed; and consequently he advised a few days' respite, in order that something more definite might be developed. To keep the mare as much at rest as possible I had her placed in slings, where she remained a few days, but on each succeeding day I became more confirmed in my original opinion. In consequence of this she was destroyed, when I found that there was a perpendicular fracture of the scaphoid bone, the dissolution of continuity extending from the centre of the superior surface, obliquely downwards to the posterior part of the inferior surface.

The general appearance of the joint was such as to indicate that ossific depositions to a large extent would ultimately take place, even if the fractured bone should be united. The cure, under these circumstances, must necessarily have been effected at the expense of a "stiff knee;" in fact, so convinced was I during the animal's life that a change of structure was going on which would result in ankylosis, that I should have had the mare destroyed sooner had she been mine.

As this case is one of not common occurrence, I have had the parts dissected and preserved as a wet preparation, and have sent you this short description of it for publication in the *Veterinarian*.

URETHRAL CALCULUS IN A FOAL, TEN WEEKS OLD.

By T. B. SHARMAN, M.R.C.V.S., Old Leake.

ON the 10th of July last I was requested by Mr. C. Richardson, of this place, to attend a foal belonging to him, which, as he said, could not stale. On my arrival I found my patient recumbent, and evidently labouring under a great amount of pain; the visible mucous membranes were highly congested, and the countenance much haggard and depressed. On making the animal rise, he was observed to walk with a straggling gait and to make frequent attempts to urinate, but no fluid escaped. The penis, also, was protruding from the sheath in a pendulous and flaccid condition.

On examining the penis I found, much to my surprise, that a calculus was situated in the urethra, about five inches from the end of the canal, and which, by gentle manipulation, I brought

further down, until I could grasp it with a pair of dressing forceps, when but little difficulty was experienced in bringing it away. As very little urine followed the extraction of the calculus I deemed it necessary to introduce the catheter to ascertain if any further obstruction existed in the passage, but I found that the instrument readily entered the bladder, so that I was enabled to empty it of its contents. The evacuation of the urine gave great relief; and after this I contented myself by merely giving the patient a moderate dose of aperient medicine.

A calculus of this description in so young an animal—the foal being only ten weeks old—is, I think, a very rare occurrence. Its presence, however, may probably be accounted for by the foal having to be reared artificially, the mare having died, in the act of giving it birth, from a rupture of a blood-vessel. The breed being a favorite one, the owner spared no pains in rearing the colt, and had it supplied with the milk of a cow, together with oil-cake and oats and wheaten flour, in, I may say, too large quantities. I ordered that the latter should be discontinued.

From the period of the extraction of the calculus the foal went on well, urinated freely, and was soon convalescent.

I have enclosed the calculus for your examination, and would only remark, in conclusion, that the foal did not appear to ail anything, except for a few hours before my attendance was requested, which doubtless depended on the fact of the calculus entering the urethral canal at about that time.

DESCRIPTION OF THE CALCULUS.

[*Weight*.—Forty-five grains.

[*Form*.—An irregular elongated-ovoid.

[*Aspect*.—Semi-opaque, of a whitish colour, and crystalline on its surface.

[*Structure*.—It was broken on the application of only a slight degree of force, when the crystalline exterior fell off and disclosed in the centre of the concretion a soft mass, having a strong smell of animal matter.

[*Analysis*.—A portion of the exterior being subjected to the action of dilute hydrochloric acid, underwent solution in it, accompanied with but very little effervescence, and leaving some flocculi. On the addition of oxalate of ammonia to the solution a slight cloudiness was produced, but on water of ammonia being added, an abundant white precipitate was thrown down, which, being touched with nitrate of silver, became of a golden yellow colour. In the field of the microscope this was found to be made up of prismatic,

stellated and penniform crystals of the *phosphate of lime*, and *tribasic phosphate of ammonia and magnesia*, with here and there a spherule of *carbonate of lime*.

The soft interior was but little acted on by the acid, even at the boiling point, except that its colour was heightened by it. It immediately dissolved in a solution of potass, and tincture of galls furnished a copious precipitate of a pale-brown colour.

The microscope showed this matter to be constituted of epithelial scales and mucous corpuscles, some of which were nucleated.

By far the greater number of the urinary calculi found in the horse consist of the carbonate of lime and mucus. In this we have the triple phosphate, constituting what is commonly designated a *fusible calculus*.

Mr. Sharman is, doubtless, right in referring its origin to the artificial food of the colt, since the organism does not form a principle, and from the milk and the bran of flour were the phosphates derived. It is also, as remarked by him, unusual to meet with a concretion of this kind in so young an animal.]

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. WATSON, M.R.C.V.S., Rugby.

(Continued from page 388.)

IT will be thus seen that all plants are considered under certain fixed and definite divisions, and that, when these are fully understood, little difficulty will be found in recognising the particular department to which each plant belongs. When once an insight has been obtained, the endless variety of beautiful objects for investigation, which are found so abundantly scattered around our every way-side walk, will prove an increasing source of interest, and gradually lead step by step to a more extended knowledge of this attractive and important science. In answer to inquiries as to the best works to commence the study of botany from, I would suggest 'Lindley's School Botany' and 'Balfour's Manual' while the more advanced student will find 'Hooker and Arnott's British Flora,' or 'Babington's Manual of British Botany,' of the greatest utility. I would also recommend the preservation of plants by drying them, as a means of possessing some very interesting specimens for future reference.

It will be remembered that at the commencement of my remarks I proposed to consider the subject under three heads; *viz.*, plants constituting the food of our domesticated animals, plants employed as medicines, and poisonous plants. Under this arrangement, however, I shall confine my remarks to the more important plants in each department, giving their botanical characters from our best authors, together with any other features which are calculated to be of interest to the veterinary surgeon.

PLANTS CONSTITUTING THE FOOD OF OUR DOMESTICATED ANIMALS.

There is no subject of greater importance at the present day than the consideration of the materials used as food for our domestic animals. In this department we are fast approaching a somewhat artificial age. We have our artificial foods and our artificial manures, some new discoveries of the virtues and value of which are every few months brought out in tempting forms, so as to induce the agriculturist and others to employ them, without any consideration as to the ultimate effects they may produce. These effects, I venture to predict, will sooner or later call for the serious attention of all parties interested in the well-being of our domesticated animals. They may not be noticed at present, but the increasing demand for artificial foods, which seems to be the fashion of the day, will lead to a departure from the natural habits of the animal, and thus be calculated eventually to produce disease. Equally important is the consideration of the effects produced upon the natural food of most of our domesticated animals by the application of artificial manures. The science of chemistry has already done much for agriculture, but it is yet in its infancy, and in no department is its assistance more required than in this; still, for a proper application of its laws to the vegetable kingdom, botany must also be understood. As well might an individual who employs artificial foods for animals be supposed to know the effects produced by them upon their digestive system, without a knowledge of anatomy and physiology, as the agriculturist, however well versed he may be in chemistry, can be expected to understand the effects produced on plants by artificial substances, without a knowledge of their physiology. It is here that great mischief will be produced unless carefully guarded against. We have now a great variety of manufactured manures, the judicious application of which may prove very beneficial; but their

indiscriminate application, which is now being extensively carried on in many parts of the country by parties who have but slight knowledge of their composition, and none of their ultimate effects upon the plants to which they are applied, will lead to results injurious both to the plant itself and to the animal that feeds upon it. Plants are susceptible of disease, and perhaps to a greater extent than most of us imagine, and these artificial stimulants are well calculated to produce disease in them. The effect of such food is already becoming apparent by the amount of disease, especially amongst our younger animals, which is exhibiting itself in those districts where for any length of time this system of manuring has been carried on.

It may be asked, what has this do with the veterinary surgeon? Unquestionably much; for anything which produces disease amongst animals is surely of the first import to those whose special calling it is to administer to their wants when the subject of it. Depend upon it, the day is not far distant when we, as a profession, shall be more sought after in these matters than we have been, and for the honour of our profession let us be found equal to the task.

But to return to the more immediate object of this paper, amongst the very great and bountiful provision for the sustenance of animals which is distributed over all parts of the globe, none is of more importance than the *grasses*. They go to chiefly make up that beautiful green carpet for which this country is so characteristic, and which proves such a source of attraction to the foreigner from sunnier climes when he lands upon our shores.

The grasses are widely spread over nearly all parts of the earth, and include a great variety of species. They comprise all the plants which yield corn, and some of the best which yield sugar. They constitute "that constant supply of essential food without which the more valuable domesticated animals could not exist in any considerable number, or for any length of time, much less be brought to furnish us with the most important articles of clothing, and some of the most important elements of food."

About 125 species grow wild in Great Britain and Ireland, exclusive of the varieties. They are all, with the exception of the *Lolium temulentum* (Darnel), perfectly wholesome, but vary much in their nutritive value. The chief botanical characters of the grasses, although more difficult of observation on account of their minuteness than other flowers, may be readily observed by the use of a small pocket-lens. They all belong to the class Endogena.

The following names are given to different parts of their structure, which, as they are not applied to other plants, it will be necessary to explain. The *stem* is called a *culm*, and in most cases it is hollow, having, however, at greater or less distances from each other, a number of solid joints, which are designated *nodes*. It varies much in length, even from a few inches to eighty or a hundred feet, as in the bamboo. The external envelope of the flower consists of two outer scales, called *glumes*, which correspond with the calyx of other flowers. Within these we find another set of scales, varying in number in different grasses, which are called by some authors *paleæ*, and by others *glumæ*. These scales correspond with the corolla of other flowers. Sometimes we get a prolongation of its midrib, which is called the *awn* (as in barley and bearded wheat). The stamens are the same as in other plants, generally three in number. The ovary is solitary, with generally two styles and feathery stigmas.

(*To be continued.*)

A CASE OF TETANUS IN A HEIFER.

By W. SHIPLEY, M.R.C.V.S., Yarmouth.

THE subject of this disease was a two-year old Norfolk heifer, in fair condition. On the evening of May 6th, she was observed by the man who had the care of her to be unwell. It was noticed that she had some difficulty in feeding, and that the saliva was running from her mouth. This, however, was attributed to either a sore mouth or throat, and as such but little was thought of it. On the following morning, the 7th, I was requested to see the animal, and give an opinion respecting the nature of her illness. I found her located in a comfortable yard, with some five or six others, with whom she was endeavouring at times to feed, but evidently could not do so. There was a good deal of frothy saliva issuing from her mouth, and at first sight I was inclined to believe that there was some local disease of the oral cavity, or that she had sustained some slight injury, as there did not appear to be any very great amount of constitutional disturbance. I had her caught, and in making a more careful examination, I found symptoms of tetanus to be so marked as to leave no doubt on my mind respecting the nature of the affection with which I had to deal. The eye.

was drawn within the orbit so as to produce a protrusion of the *membrana nictitans*, although not to such a marked extent as is seen in the horse when the subject of tetanus. A most peculiar appearance was also imparted to the mouth by the lips being drawn backwards by the muscular contractions. The jaws were partially closed, the ears stiffened, and the muscles of the neck rigid. The legs were extended, and the tail partially raised. The pulse was not much accelerated, nor was the breathing but little disturbed. The fæces were rather hard, but a fair quantity of them had been passed. The urine was frequently voided in small quantities, and of high colour. The temperature of the body was natural.

All endeavours to detect the cause of the disease by a careful examination of the body failed, nor could I obtain any satisfactory account by questioning those in attendance upon her. With much difficulty a purgative draught was administered, for the attempt brought on violent spasms of the throat, and I was obliged to exercise the greatest care to prevent suffocation taking place. I had my patient removed from the yard into a quiet box, and gave instructions for water and sloppy mash to be placed within her reach. I saw her again in the evening, and when perfectly undisturbed, the tetanic spasms were not particularly marked; but the slightest excitement brought them on, and as it was utterly useless to attempt to give more medicine by the mouth, I applied a blister along the course of the spine. She was still noticed to be frequently voiding her urine, which was somewhat darker in colour than before. There was likewise some tympany of the abdomen present, which gradually increased as the disease went on.

8th.—I found her much worse this morning; the bowels, however, had been relieved, and the fæces were soft. The tetanic spasms pervaded the whole body, and were very severe. The urine was not voided so frequently, nor was the pulse but little increased in frequency. She lies down occasionally, and has not much difficulty in rising, although she moves as if she were all one piece. The gaseous distension of the rumen is augmented, but she has managed to suck down some sloppy mash during the night. All the symptoms are much aggravated.

9th.—The spasmodic contractions of the muscles are continuous, and most painful to behold. Under these circumstances it was deemed prudent to have her destroyed forthwith, which was accordingly done.

Post-mortem examination.—The lungs and all the thoracic viscera were in a normal condition. The rumen was dis-

tended with gaseous matter, and contained a *solid* lump of ingesta, composed of hay, &c. This was the only thing to be observed in the viscera of the abdominal cavity incompatible with health. The urinary organs were also healthy. In fact, nothing which could throw a satisfactory light on the cause of the disease was to be found by an examination of either the internal or external parts of the body.

I have been induced to send you the history of this case, believing the disease to be of rare occurrence among cattle; at least, I have never before seen a case of the kind. Although the general rigidity of the muscles was great, and the spasms very intense and painful, still the irritability of the animal was by no means equal to that which is seen in the horse. Making a sudden noise would lead to the tetanic spasms showing themselves more severely, but even then there was not that peculiarly anxious and frightened look which is so characteristic of the disease in the horse.

OBSERVATIONS ON THE STATE AND REQUIREMENTS OF VETERINARY SCIENCE IN AMERICA.

By CHAS. M. WOOD, V.S., Boston, Massachusetts.

GENTLEMEN,—Having read your article in the May number of the *Veterinarian*, “on the importance of co-operation,” I was gratified to find, that the arguments I had used, in this country, to bring about such co-operation, were so ably enforced by yourselves. Here, ever since the practice of the veterinary art, each practitioner has acted by himself, and, to use a common expression in this country, “done business on his own hook.”

Until very recently there were no veterinary associations in all New England, that populous part of the United States which claims precedence over the rest in scholarship and scientific attainments. Only a year since, a few of us, here in Boston, Massachusetts, formed a society for mutual instruction, and for debating the cases which its members communicated.

From that small beginning we have now an association formed for the improvement and diffusion of veterinary knowledge among those practitioners who feel interested in the subject.

We have found persons sufficiently learned and able to instruct *others*, who desire to qualify themselves as practitioners, and although, like all new scientific attempts, "*Veterinarianism*" and its progress have been slow, yet we see daily proofs that this branch of medical science is becoming more and more estimated by the people at large. These reap the benefit of judicious and scientific treatment of their domesticated animals, and so necessarily in proportion will the science and its practitioners grow in their favour.

That we may keep up with the advancing steps of the age in other countries, we seek new light in the pages of their periodicals which are devoted to the diffusion of scientific knowledge, and in the *Veterinarian* we find new fields of investigation opened for our view, and of treatment proposed for our imitation. By the able article on "co-operation," in your number for May, we are interested and instructed, as well as confirmed in the opinions which we have so frequently urged upon the people here in the medical journals and newspapers circulated among them; and we have had the satisfaction to find that we have awakened an interest in our pursuits, and have won public confidence in our favour.

The great obstacle with which we have had to contend has been the dislike to co-operation among the practitioners of our art and particularly among the *certified* members of the profession. There is always, in such cases, a little jealousy and contemptible fear, that, by uniting with the uncertified, they will acknowledge an equality.

This, however, is one of the misconceptions which is soon dissipated, when they find a readiness, and even a zeal, to receive as well as to communicate information to such as assemble for that purpose, pervades the meeting.

Every word you have written, in your valuable article on co-operation, we have proved to be sound and true by our progress in this country. We, who have been weak, are now becoming strong by our union. We, who were oppressed by public opinion, have now by acting together won respect and confidence, and in proportion to the union among ourselves so has been the growth of popular regard towards our profession.

The people never seek instruction from, or place any confidence in, those who show an exclusive spirit, and selfishly withhold that knowledge which might be imparted for the general good. No man, however wise, can ever command followers, if he puts himself in buckram, and goes about as a sealed vessel of science; and you may be assured that the

advancing spirit of the age has travelled as far as the United States, and that we too are "growing wiser" with the rest of mankind in Europe. Our practitioners now exhibit much less reluctance to communicate and compare cases, so that the disputations, so common among the uninstructed, have given way to candid discussion. All this is only a sign that *here* we are in the way of progress, and although we cannot hope to overtake those in other lands, who have long gone before us, still we can at least follow in their footsteps, and thus escape the dangers attending new explorations.

I learn that two of our New England young gentlemen have recently graduated at the Royal Veterinary College of London, and are about to return to this country; and, as I have long had the pleasure of their acquaintance, I shall hail their return with sincere satisfaction, and expect much from their co-operation. Every addition to the number of educated practitioners tends to raise the profession to the dignity to which it is justly entitled. It is what we want here—to show the people the difference between those who know what is right, and practise what they know, and "those who *guess*" at knowledge and practise by the receipt-books of their great-grandfathers.

To show that *we* have not been neglectful of our duty, there was published here, during the years 1856-57-58, a *Veterinary Journal*, to which some of our best practitioners contributed. This periodical, among other things, contained many original hints to agriculturists, as well as to horse- and cattle-owners, and gave besides many valuable extracts from the *London Veterinarian*. Its publication, however, was recently suspended, for want of patronage. The editor has often stated to us, that some of its contents were too scientific for this country, and that he had to substitute matter of a *more simple* kind, as being the more acceptable to his readers. Thus, as we think, he aided in the dissemination of error rather than truth, and very soon after what he called the *too scientific contributions* were discontinued the journal itself collapsed.

I would observe that much injury has been done in this country, and particularly in this city, and I may add throughout New England, by the republication of books on the veterinary art which have long been rejected in Europe. True science has thus had to contend with opinions formed from the study of exploded theories and practice; and you can readily conceive that it was no easy task to recover the people from the path of error and place them on the clear and certain road of tested truth. But as truth always in the

end rewards its defenders, so *we* now see the morning of a brighter day beginning to enlighten our hopes with its beams. We lay claim to the honour of having assisted in dispersing the clouds of ignorance which once covered the horizon, and earnestly therefore do we hope that our brethren on both sides of the broad Atlantic will aid us in the procuring of that full effulgence of light which shall disperse *all* remaining darkness, and enable us to rejoice in the perfect day.

With reference to another subject, I entirely agree with your remarks on Mr. COWIE's proposition of keeping notes of all cases and of relating both "unfortunate, as well as fortunate cases." It is certainly as important to know the road which is to be *avoided*, as to discover the one which leads to safety.

My letter, I fear, will somewhat tax your patience, but I feel assured that you will pardon the zeal I have shown in the cause of science. Again expressing my entire satisfaction in such "articles" as the one I have referred to,

I am, &c.

To the Editors of the 'Veterinarian.'

DISEASED BRAIN OF A SHEEP.

By J. M. GOUDE, M.R.C.V.S., Hinckley.

GENTLEMEN,—Herewith I send you the head of a sheep, which I this morning obtained from a butcher, thinking it would be an interesting specimen of disease for your investigation. I should much like to have your opinion of the case, as I have not met with a similar one before.

The history is this. The owner has been troubled with almost continuous attacks of ophthalmia among his stock for some time past, for which he has been using common salt, blown into the eyes, and which, he informed me, generally relieved the symptoms. Two of these sheep, however, became quite blind and giddy, and consequently he had them killed this morning, and requested me to make an examination of their heads. I send one of them to you just as I received it. You will perceive that a quantity of pus is located at the back of the eye, and that it has penetrated under the base of the brain. I could have wished that the butcher had done

less injury to the skull, but I still hope that you will be enabled to make a satisfactory examination of it.

I am, &c.

To the Editors of the 'Veterinarian.'

[We are indebted to Assistant Professor Varnell for the following description of the pathology of the case and the changes that had taken place.]

The partially decomposed state of the above specimen, as well as the injury it had received at the hands of the butcher, precluded the possibility of my forming an opinion of the nature of the disease under which the animal had laboured, with the same degree of correctness as I might have done had I seen the parts immediately upon the sheep being slaughtered. If, also, more facts relating to the symptoms, and other circumstances which were associated with this malady, had been furnished, I should have been better able to come to a conclusion as to the cause which gave rise to the affection, as well as of its true pathology.

On exposing the cerebrum the right hemisphere was found to be alone affected, and this was carefully examined, as were also its membranes, and the optic nerve and its outer covering, from the base of the brain to its entrance into the globe of the eye. The eye itself was so much decomposed and broken up that no satisfactory examination could be made of it.

Both the optic nerve and its outer covering were, however, found to be free from disease.

The dura mater, and the parietal as well as the visceral reflections of the arachnoid membrane, appeared to be natural, as was also the pia mater, with the exception of its larger vessels which evidently contained more blood than usual. The veins, also, of the choroid plexus and of the velum interpositum were slightly distended with blood, and had, with the parts before alluded to, a rusty appearance.

Between the visceral and the parietal reflection of the arachnoid membrane a layer of lymph was located, which, at the base of the brain, was much thicker than at any other part, and was here undergoing the process of degeneration into pus.

The general condition of the parts would lead to the inference that water had existed, at the time the sheep was slaughtered, both in the arachnoid space and also in the ventricles of the brain, and that it had escaped when the

head was severed from the body and the cranial cavity opened.

It is important that the practitioner should satisfy himself, if possible, as to whether the brain was primarily affected, or whether the disease complained of—*ophthalmia*—was or was not a result of the affection of the brain and its membranes. I incline to the opinion that the brain was first affected, although not observed. I do not consider that acute inflammation existed, but that congestion of the vessels, associated, perhaps, with slight apoplexy, was present, and not giving rise only to effusion of the serum of the blood, but also to some of the red particles from the vessels. If this be so, we can account for the rusty aspect which pervaded the parts, and also for the deposit of lymph which was met with. We can also understand how vision became interfered with, when we reflect on the effects which the pressure of the effused matter would have upon the cerebral hemisphere generally.

Facts and Observations.

DOES THE LIVER FABRICATE SUGAR?

IN the 'Guy's Hospital Reports,' Dr. Pavy has published a memoir on what he calls the pretended glycogenic function of the liver. He therein announces—1st. That the blood taken from the right ventricle of living animals contains only an exceedingly minute quantity of sugar.

2d. That the liver itself in a normal state contains scarcely any sugar.

Dr. Pavy shows, moreover, that when the liver contains much sugar, it has been subjected to causes which have altered and transformed the glycogenic materials which it contains. When much sugar is found in the blood of a living animal, the liver has been subjected to congestion, or compression, &c. From all which it follows, according to Dr. Pavy, that the liver has not the function of forming sugar. In another memoir Dr. Pavy shows that the liver enlarges notably in dogs fed on amylaceous matters, or flesh and sugar, and that in animals the quantity of glycogenic material in the liver becomes greater than in animals fed on flesh. From which it results that the glycogenic materials of the liver appear to be derived from feculent and saccharine foods.—*Journal de Physiologie.*

OBSERVATIONS ON CHLOROFORM.

DR. DESPRES, in a paper recently addressed to the Paris Academy of Sciences on chloroform as an anæsthetic, describes a method of his for removing the suspension of the respiratory functions, which is one of its effects. "The action of chloroform," he says, "may be divided into periods: 1, of repulsion; 2, of excitement or convulsion; and 3, of resolution. The suspension of respiration is a phenomenon, which may manifest itself in each of these periods; when it does, it is caused in the first period by the voluntary occlusion of the glottis, or opening of the windpipe, which the patient instinctively closes in order to avoid the disagreeable sensation produced by the vapour of chloroform from its first inhalation; in the second by the convulsive and involuntary occlusion of the glottis, owing to the muscular contraction which characterises this period—a contraction which extends from the general muscular system to the muscles of the glottis; in the third stage, by the mechanical and involuntary occlusion of the upper orifice of the larynx, which is closed by the forcing of the tongue against the back and upper part of the mouth when chloroform is administered to the patient in a sitting posture, or else by the falling of the base of the tongue on that orifice when the patient lies on his back. I obviate, he says, the suspension of respiration by a method which consists in introducing the index finger into the pharynx down to the base of the epiglottis, bending it in the shape of a hook, and thus raising the base of the tongue, and bringing it forward in the direction of a line supposed to be drawn from the base of the epiglottis to the upper part of the symphysis of the chin."

PERSISTENT TYPES OF ANIMAL LIFE.

A DISCOURSE on this subject was delivered at the Royal Institution, June 3d, by Professor Huxley. He considered that palæontologists had greatly exaggerated the number of animals viewed as extinct. After long investigation he concluded that of 120 ordinal types of animals only eight or nine types were extinct; and he added, on the authority of Dr. Joseph Hooker, the eminent botanist, that of the 200 ordinal types of plants not one was wanting. Professor Huxley exemplified his views from all departments of the animal

kingdom—from the polyzoa up to the vertebrata—specimens of each being found in very low strata. He did not, therefore, believe that there was a much greater difference between the earth's appearance in early geological times and in our own, than there is now between the different regions of the globe. He remarked, in conclusion, that the little change in the persistent types of animal and vegetable life appeared to him to "indicate that each is but the result of an enormous series of antecedent changes of form, the whole of which are perhaps for ever hidden from us in the abyss of pre-geologic time."—*Medical Times*.

NEW DISINFECTING AGENT.

M. VELPEAU has laid before the Académie des Sciences some account of the results of the employment of a new disinfecting agent discovered by MM. Demeaux and Corne. Its effect in the removal of the most disgusting odours emanating from wounds, etc. (as gangrene, cancer, etc.) has proved almost instantaneous, while its application is painless and innocuous. It is a cheap grayish powder, exhaling a slight bituminous odour, and is formed of 100 parts of the plaster of commerce in powder, and from 1 to 3 parts of coal-tar. Not only does it possess the power of removing all kinds of stench, but also of absorbing the morbid fluids. For surgical purposes it may be combined with oil, which binds it together without dissolving it. It has been abundantly tried in the wards of La Charité, the dissecting-rooms, and elsewhere, and the most sanguine anticipations are entertained as to the results of the publicity now given, whether regarding it as an application for surgical or hygienic purposes.—*Medical Times*.

DEATH OF SHEEP FROM THE SUCKING OF THEIR WOOL AFTER BEING DRESSED.

A SINGULAR circumstance has just occurred in the parish of Cudham, Kent, on Lusted Farm, in the occupation of Mr. Jas. Francis. Mr. Francis has been in the habit for several years of using a wash to his sheep, containing mercury and soft soap, as a preventive against flies. He has generally had it applied by dipping them, but this year he had them laid on their side and poured the wash—one pint to a sheep—over them. The flock (about 128) having been thus

dressed, were turned into a barren part of a field to drip. About an hour or so afterwards the shepherd noticed some of them looking badly, and in a short space of time they began to die, and by the morning only sixteen remained alive out of the entire number. It is supposed that they had sucked the moisture from each other's wool, there being no water in the field, and the great heat causing them much thirst.—*Sussex Express*.

POISONING OF PIGS BY AN ACCIDENTAL PARTAKING OF SHEEP-DIPPING MIXTURE.

WITHIN the past month we have been consulted in a similar case to the preceding in the accidental poisoning of some valuable pigs, the property of an influential member of the Royal Agricultural Society. It appears that the shepherd emptied some "sheep-dipping mixture," which he had to spare after dressing the sheep, into the yard where the pigs were kept, and that the animals, driven by extreme thirst consequent on the great heat which prevailed, drank some of the fluid. In this way twenty-two were killed. One of the animals was sent to the College and examined by Assistant Professor Varnell, who found that the immediate deleterious effects of the agent were produced on the mucous membrane of the mouth and fauces. These parts were intensely inflamed and covered over with a thick layer of effused lymph, which likewise extended into the larynx and a short distance down the trachea, causing death by asphyxia.

The entire lining membrane of the œsophagus was similarly covered with lymph, down to the cardiac orifice of the stomach, which organ, however, was scarcely diseased. The mixture was composed of arsenic, sulphur, and soft-soap, in solution.

FLOURENS ON ANIMALS.

"ANIMALS," says M. Flourens, "perceive, think, and reflect; but man is the only one of created beings who possesses the attribute of perceiving that he perceives, of knowing that he knows, and of thinking that he thinks."

Extracts from British and Foreign Journals.

ON THE ARTIFICIAL PRODUCTION OF BONE BY TRANSPLANTATION OF THE PERIOSTEUM AND BY OSSEOUS GRAFTS.

By M. OLLIER.

THE following is a brief abstract of the papers by M. Ollier which have recently excited so much attention at the Académie des Sciences.

Notwithstanding that the experiments by Flourens and others may be considered to have decided the question of the agency of the periosteum, M. Ollier, in order to elucidate certain undecided points, determined to institute a new series of experiments of a very varied and novel character. All the details of these experiments have been laid before the Biological Society; and those of them which relate to transplantation in the same animal are given at length, with illustrations, in Brown-Séguard's *Journal de Physiologie* for January, 1859. Here are the results:

I. *The artificial production of bone by means of the transplantation of periosteum.* (1.) *Transplantation in the same animal.*—Although the experiments were also performed on other animals, the rabbit was especially the one selected. The strip of periosteum was generally detached from the tibia, as being very accessible; and wherever this strip was grafted or secured, there was bone produced. *a. The flap of periosteum retains its attachment to the base* by one of its extremities, the rest of it being lodged within the muscles, under the skin, &c.; and consequently it continues to receive some vessels from the bone. A strip may be obtained from the tibia, long enough to wind round the bone or to twist into a spiral or figure-of-eight form, around the deep muscles, a cavity in these having been first hollowed out. If the rabbit be young and vigorous, immediate union usually takes place, and the animal seems scarcely to have suffered from the operation. The periosteum contracts adhesions with the tissues, amidst which it is placed, and new bone is formed at its under surface, this new bone assuming the form and disposition of the periosteal flap. The amount of bone thus formed diminishes in quantity, however, with the age of the animal. Thus, in a five-year-old rabbit, a mere trace of osseous tissue was found,

the remainder of the periosteum being still fibrous. The new bone adheres to the old bone whence the periosteum has been borrowed, and that by so considerable a base as to give it the appearance of an apophysis. *b. The communicating pedicle of the flap is excised* three or four days after the transplantation, so as to cut off all communication with the bone. The ossifiable exudation continues none the less, and new bone is produced, which is adherent or moveable accordingly as the strip is re-applied to the bone or left quite independent. *c. The flap is completely divided at the time of the operation*, and transplanted amidst neighbouring or distant parts. Thus, the strips have been transplanted under the skin of the groin, the back, &c., or placed in the midst of the crest of a cock; and in all instances ossifiable secretion has resulted—the osseous production being large in proportion to the size of the animal and the extent of the periosteal strip. Bones from one to three centimetres in length, and of varied form, have been produced. The nature of the medium in which the transplantation was effected influenced the result; and the crest of the cock, owing to its rich vascularity, constituted an excellent soil for this artificial osteogenesis.

(2.) *Transplantation of the periosteum of one animal to another of the same or of a different species.*—These interchanges have been tried between the dog and the rabbit, the rabbit and the guinea pig, the fowl and the rabbit, and the dog and the fowl. Periosteum transplanted under these circumstances may comport itself in different ways: *a.* Occasionally it may become absorbed soon after the transplantation; *b.* it may become gangrenous, and be discharged by suppuration—and this was almost constantly the case at Paris with respect to rabbits, in which the periosteum of the dog had been applied; *c.* the flap may remain encysted without giving rise to suppuration; the cysts after a while being found to contain only fatty matter or concrete pus; *d.* the periosteum adheres to the surrounding tissues, and is penetrated with new vessels, but it has lost its osteogenic properties, and continues only as a vascular and fibrous membrane; *e.* the periosteum not only contracts fibrous and vascular adhesions, but produces osseous tissue. This is brought about with much more difficulty than in the case of transplantation in the same species, depending upon conditions which require to be more accurately ascertained.

(3.) *External appearance and structure of the bone produced by transplanation.*—The bone thus produced is not a mere calcareous concretion, or even an unformed mass of osseous substance. Its texture presents a disposition analogous to

that of normal bone, and the microscope shows that the bony corpuscle is the fundamental element. Externally, the bone is clothed with periosteum. It is hollowed into medullary spaces, filled with a substance resembling foetal medulla, which afterwards unite into one large cavity. The new bone may be adherent or not to the old one. In the former case it is no production of the old bone, but a new bone added to the old one, increasing side by side with it, but not living at its expense. Tracing the development of this new bone from the commencement, we may convince ourselves that it is formed from a subperiosteal blastema, issuing from the under surface of the periosteum; and if we scrape one half of this surface with a scalpel, we then destroy the germs of future bone, and the osseous tissue will only be produced by the half that has not been scraped.

II. *Osseous Grafts*.—M. Ollier has performed a series of experiments, in which bones entirely separated from the soft parts, but surrounded by their periosteum, have, when transplanted, continued to live in their new localities, increasing according to the laws of their normal development. This, however, as yet, has only obtained with regard to the bones of the same species of animals; the bone under other circumstances, only apparently grafting, becomes encysted. The preservation of the periosteum is the one thing essential for the success of the transplantation. Without this, the osseous tissue does not appear to possess sufficient vitality for the contraction of vascular adhesions; and although it offers more or less resistance to absorption, it at last disappears.—*Gazette Médicale*, 1859, Nos. xiv and xv.—*Med Times and Gazette*.

REARING OF CATTLE.

IN Great Britain, where animal food enters so very largely into the general consumption of the inhabitants, no part of the economy of farming demands a more earnest attention than the rearing and fattening of the animals that are used for that purpose. A detailed statement of the most approved mode of managing cattle may not be unserviceable.

The calving season commences in January and continues till June, the earliest dropped calves being always the best, and maintaining a superiority throughout the season. So soon as it is dropped, the calf is rubbed dry by straw in hand; an egg is crushed and passed down its throat, and it is carried to a single apartment, in which it lies undisturbed for some

hours. In the mean time, the teats of the cow are stripped by the hand, in order to discharge the first milk, which is reckoned to be unwholesome. The calf is then introduced and sucks a moderate quantity, and is again returned to its apartment. The sucking is *performed* thrice a-day, at six o'clock in the morning, at noon, and at six in the evening. The cow-house and the calf-pens are adjoining, and afford convenience by that position. The calf is led by a rope or halter on the head, and when it is sucking, the end of the rope is slung longitudinally for that purpose behind the cow. Two calves suck one cow, and are placed one on each side.

So soon as the calf is able to masticate, bruised oil-cake is placed in a box in a corner of the apartment, which food the animal very soon learns to chew, and it has a very nourishing effect. Another box contains a lump of chalk, which the animal licks, and it is found to be very useful in correcting the crude acidities of the stomach. A rack is placed on the subdivision of the apartments, and in it are placed clover and vetches, which the animal soon learns to eat. One rack thus serves two calves.

The calf continues to be fed and sucked in this manner for three months at least, when it will be grown strong and fit to be removed to an adjoining grass paddock, which must be rich in pasture, well sheltered, and provided with a regular and ample supply of fresh water, and a roomy shelter-shed. An orchard suits well for this purpose, the shade of the trees is grateful and the grass is tender for the young animals under the shade of the trees. At the end of sixteen weeks the milk is gradually withdrawn, and if the grass in the paddock be scanty, cut clovers and vetches must be given daily in racks, and in a fresh state. The shelter-shed must be well littered and kept dry.

Sucking the dam is very much preferable to giving the milk to the calves by hand from the pail; for by exposure the volatile gases of the milk escape; and in the process of sucking a quantity of saliva is engendered, which is necessary for the proper digestion of the milk, and for the secretion of nutritious juices. The appearance of the animal at once shows the great difference of the two ways of rearing; the suckled calf being ever sleek in the coat, light in the offal, and of thriving and animated appearance. The animal that is fed by hand is heavy in the paunch, slower in growth, and of a generally more unthrifty appearance.

By the month of July the earliest calves will be able to be removed from the weaning paddock to the pasture field, which must be rich and well sheltered and watered. They remain

there till the end of October, when they are removed to the farm, where they are put into yards provided with shelter, and about six or eight animals in each yard, into which fresh straw is put daily, and the feeding crib is frequently moved from place to place in order that the dung may be equally made, and get the same trampling and consolidation in every part of the yard. Fresh tops of turnips are given them daily; and in the early winter the tops of mangel wurzel are added. The smallest sized turnips go with the tops and form the food of the animals during the first winter, when the teeth are weak and the mouth is delicate.

In the first part of the month of May the grass is most generally sufficiently grown to afford a bite to pasturing animals, and at that time the young cattle, now about one year old, are removed to the pasture-fields, which must be well fenced and provided with a shelter-shed and an ample supply of fresh water. The gates and fences must be made very secure and impenetrable, that no damage may happen to the cattle in trying to escape by leaping the fences, or effecting a passage in any way. The shelter-shed, large and roomy, is an indispensable requisite for the purpose of protecting the animals against the scorching heats of noon-day and the cold storms of wind and rain that occur in autumn and in the early part of winter. No part of pasturing economy is more necessary.

About the end of the month of October the declension of the herbage and the increasing inclemency of the season render it necessary to house the cattle, and they are removed from the fields to the farm-yards, and there arranged for the winter in smaller lots than during the previous winter, as the size of the animals has increased; six or eight beasts are sufficient for one yard. Fresh straw is given them daily in a wooden crib, latticed at the sides and bottom, and frequently moved from place to place. The mouths of the animals being now strong, the bulbs of the turnips are given to them to eat, the tops and roots being cut off before they are removed from the field where they have grown. This operation is performed by a sharp sickle in the hands of persons employed for the purpose. Longitudinal cribs, made of latticed planks of wood, are placed in the yards, in which the turnips are laid every morning by break of day, and where the cattle eat them undisturbed. The mud and filth are very carefully removed by the shovel every morning before the fresh turnips are deposited. The eating of the roots is finished by the time when darkness sets in, which prevents any accidents

happening to the animals, from choking or hoving, during the night. The water is supplied to each yard in cast-iron troughs, which are fed by pipes, with ball-cocks, leading from higher ground or from elevated casks, to which the water is raised by a force-pump. One trough of five or six feet in length supplies two yards, by being placed across the subdivision walls. The troughs require to be cleansed out occasionally, in order to remove the earthy sediment that falls to the bottom. This purpose is effected by a plug-hole in the end of the trough by which the watery sediment escapes, to which it is driven by a brush in the hand, and assisted by the trough being placed with a gentle inclination to the end which contains the plug-hole. The troughs are most convenient when the sides are shelving.

The young cattle are treated yearly in the manner above described, till the third winter, when the animals will be three years and a half old; and then the fattening process commences. The animals are arranged by the 1st of November in the feeding yards, in lots of two, and not more than four together; it being a universal rule that, the smaller the number of animals that feed together, the better they thrive. Accordingly, many most eminent writers have recommended, and many very eminent practitioners have adopted, the mode of confining the animals "singly;" but the most general practice is, two or four together. The yards must be dry, have good shelter-sheds, and a regular supply of water. Cattle eating turnips *ad libitum* do not drink much water; but it is better that they have the liberty of taking or refusing it. In these yards the cattle are supplied daily with fresh turnips, and in quantity as many as they can consume, so as not to leave any part to be wasted or reduced to a loss. Fresh straw and hay are given daily in the cribs. In the spring, in February and March, one feed of oil-cake is given daily, which hastens the process of fattening, and improves the quality of the dung, by enriching the excrements of the animal. The space of three months may be stated, at a general calculation, as the time required to render an animal that is treated in the above manner fat or fit to be slaughtered. But very much, if not all, depends on the grazing state of the animal; for, if it comes from the pasture-field to the feeding-yard in a lean state, double the above-mentioned time will be required to bring the animal into even a medium state of maturity. Hence arises the necessity of keeping the animals always in a forward, fresh condition during the years of their early growth. When a more ample supply of food is given to an animal in this state, the fattening process commences immediately, because, all the parts of the

body being kept in a full state, an instant readiness is afforded to the accumulation of additional fat and fibre. But if the carcase is lean, and wanting in the necessary quantity of muscular fibre and offal to render the parts immediately susceptible of enlargement, a time and a quantity of food are required to produce that state of body, which are often very improperly included in the time required for fattening, but which belong most exclusively to the grazing period. Hence the justice of the remark that cattle should be fed gradually from their birth upwards.

The age of four years has been fixed as the most advantageous time for cattle to be fattened and sold. The animals that are most forward in condition will be ready in February, when the sale will commence, and be continued regularly till May, in single animals or more from the stalls, as they become fit for the butcher. If any animals remain in May that are not fit to be slaughtered they are sent to the field to graze, and are sold during summer, as they become ready, under the name of "grass-fed" beef.

In the mode that has been now detailed, the rearing and fattening of cattle becomes a systematic manufacture of vegetable food into fat and muscular fibre, by means of the chewing and digestive organs of an animal. To please the taste of these organs, and to afford them the nutriment that is most proper for the required purpose, constitute the whole art of the process now described. The foundation of the system lies in the young calf having an ample supply of the mother's milk continued till it arrives at an age sufficient to enable it to live and thrive on other food. The after-treatment must always be such as to promote the onward progress of the animal. It is a very common mistake with rearing of cattle, to pinch the quantity of food, in order that they may be reared at little cost, and a more erroneous idea cannot be entertained. An animal that is stunted in growth, during its infancy, is never able to recover the natural vigour; the carcase never swells into bulk, nor enjoys the lubricating essences, nor the nutritious juices, that are necessary to promote the activity of animal life. A more destructive practice cannot prevail in any department of agriculture.

It is a very common practice to give the calves, by hand, the milk that has been drawn from the cow, and held in a pail or bucket, from which the calf soon learns to drink. A pinched allowance is also given them in order to save milk, for the purpose of making it into butter and cheese. But if these articles are imperatively required, the making of

them need not be attended with the starvation and abuse of the young animal ; for it only remains to appropriate a certain number of cows for the purpose of suckling the calves. House the other part for yielding milk for the dairy. This method answers both purposes, and removes the evil that results from uniting them, whereby the one defeats the purposes of the other. From whatever cause it may arise, the fact is certain, that calves fed with milk, by hand from the pail, never thrive so well, nor become such fine animals as others that are suckled, even though the quantity of milk allowed be most ample, and to the full satisfaction of the animal. It is wholly useless to search for theory, when the fact is so evident and certain.

The second essential requisite for the profitable rearing and fattening of cattle, is the proper accommodation during summer and winter, in the different periods of their age and growth ; for if an ample supply of nutritious food be necessary to supply the wants of nature, and to advance the healthy maturity, shelter and warmth are not less necessary to promote the development of the proper effects of the food which the animal consumes. During the period of suckling, the calf is confined in a single apartment of ten feet by four, or thereabouts ; which single confinement prevents any annoyance by the animal going and sucking the ears or navel of the other, after sucking the dam. A door from the passage opens to each apartment. The floor is wooden plank, very closely pierced with auger holes, which carry away all moisture, and afford a dry bed for the animal. Short straw or chaff is the best litter. In the grass paddock, whither they are removed from the pens, a shelter-shed is indispensable, and an ample supply of good fresh water. The summer pasturage must be luxuriant in fields which are well watered and fenced, and provided with a shelter-shed opening to the four quarters thus affording shelter from every direction.

The winter accommodation requires very particular attention. The supply of juicy food must be ample, but not nauseating ; the littering of the yards must be very frequent, in order to keep the yards dry, and the shelter-shed must be roomy and warm, with the bottom sloping outwards, to prevent the water from standing within it. It is advantageous that the cattle eat the food under cover, which protects both the animal and the food from the inclemency of the weather. This purpose will be very easily and conveniently effected by roofing over the whole area of a farmery, like the terminus of a railway. It promises to be a valuable improvement of modern times to place the animals, and every

other thing, under cover. It prevents the heavy rains from injuring the dung, and the hot scorching suns from drying and withering the surface of the strawy materials.

A very important question has long agitated the agricultural world, and is yet very far from being settled, whether cattle are best fattened in open yards provided with shelter-sheds, or by being tied in stalls in a roofed house? In the case of store, or keeping, cattle the question is very easily solved. A freedom of moving about in the yards is necessary to promote the growth and healthy state of the animal, and the unlimited contact of fresh air very much advances the fruitful progress of animal life. In the case of fattening animals it is asserted that cattle fatten more quickly when they are confined in a warm temperature, and that the secretion of fat is encouraged by the animal being deprived of the power of any movement by reason of being tied to a stake. But the flesh of animals that live and are fattened in a warm temperature is always found to be loose and flabby, and wanting in the firmness and consistency that are imparted by a moderately frigorific quality of the atmosphere. A number of animals tied in confinement are always breathing the contaminated gasses, and the advantages to health are known to be very great of respiration being performed in a large volume of air. The feet of cattle tied in stalls become soft, and the animals get lame and unable to perform any travel. The feet of cattle fed in yards keep sound, and the flesh is much firmer, and is very easily distinguished by the eye and the touch of experience. The animal is fattened as quickly as when tied in a house, when the proper care is used in erecting the yards and sheds, and when the necessary attention is employed in keeping the yards dry and the animals comfortable. Less labour is also created than in removing the dung from the feeding-houses. But on farms of any considerable size both methods may be very usefully employed; the animals of the more unruly nature may be tied in the house, and the quieter may be put in yards, and not more than two together. The objection to feeding in yards generally arises from putting too many animals together, and then one is disturbed by another goring and pushing it about. When cattle having a thick coat of hair are tied in a house to be fattened, an advantage may be obtained by clipping the coats, in order to promote a freer perspiration, and to remove from the skin the itching and uneasiness engendered by the close covering of the hairy integument.—*Farmer's Magazine*.

ON THE POISON WHICH IS DEVELOPED IN MEATS AND SAUSAGES.

CRITICAL CONSIDERATIONS ON THE VARIOUS HYPOTHESES RELATIVE TO THE NATURE OF THIS POISONOUS PRINCIPLE, WITH THE ANNOUNCEMENT OF A NEW THEORY OF ITS TRUE ESSENCE.

By M. E. VAN DEN CORPUT.

(Continued from p. 490.)

THE investigation of this mysterious poison, naturally could not but excite the sagacity of chemists and toxicologists. Many eminent men of science, Kerner, Emmert, Buchner, Schumann, Liebig, and, more recently, Professor Schlossberger (see *The Chemist*, April, 1855, p. 442), have made it the subject of special researches; but the difference of the various opinions which these scientific men have published, and the contrariety of the results at which they have arrived, demonstrate pre-eminently the difficulty of such a study.

Before discussing the different hypotheses which have been enunciated on this very obscure subject, we will inquire whether analogous examples of poisoning have not been observed, owing to the use of other alimentary matters.

In looking over the principal works which treat of toxicology, we are at once struck with the great number of accidents which have been caused by the use of certain decayed meats of pork-shops, and with the perfect similarity of the symptoms produced by the latter with those which we have just described as appertaining to the *botulic poison*.

It is, on the other hand, now known in science, contrary to what had long been admitted on the faith of a vulgar prejudice, that unprepared meats, although they may have arrived at a far advanced stage of putrefaction, and even when obtained from diseased animals, may, after being cooked, with impunity be introduced into the food of man, without occasioning the least inconvenience.

This fact results from a long series of experimental researches, undertaken at the Veterinary School of Alfort and elsewhere, by MM. Huzard, Renault and others; which researches demonstrate most unquestionably that the meats of diseased animals, even when they have died of contagious or inoculable afflictions, such as carbuncle and farcy, may without danger form part of our daily regimen. Moreover, M. Flourens relates that, during the fatal period of 1789, the poor of St. Germain and of Alfort ate 700 or 800 horses

which were afflicted with glanders or farcy without suffering inconvenience.

It was the same with animals which had died of contagious typhus in the years 1814, 1815, and 1816.

These considerations are likewise entirely confirmed by M. Payen, in his excellent '*Traité des Substances Alimentaires.*' (Paris, 1854, p. 37.)

These facts explain, moreover, in the most simple manner, the ideas of physiological chemistry, when we consider the powerfully modifying action which the *gastro-enteric* juices exert on the proteinic combinations introduced into the digestive tube, an important circumstance, to which we shall have occasion to recur in refuting the hypothesis of putrid poisoning, which Liebig has set up for explaining the poisoning by decayed meats.

But if the dogmatic principles of modern science, in accordance with careful experiment, prove the perfect innocuity of the flesh of diseased animals, it is not the same with regard to certain musty preserved meats, or meats which have undergone spontaneous alteration.

Too many examples have indeed demonstrated that certain alimentary preparations, and particularly pork-butchers' meats, are susceptible, especially when they have been preserved too long in a damp and warm atmosphere, of a peculiar alteration, hitherto unknown in its essence, but capable of determining mortal accidents, which frequently present analogies with those which decayed sausages cause.

We may mention in support of what we advance some facts, scattered in the annals of medicine, relative to symptoms of this kind, in regard to which chemical researches have hitherto been quite unfruitful.

On the 7th of May, 1832, M. Chevallier, chemist, of Paris, was called upon to make, in common with two physicians, a report on some pork-butchers' meats, which had occasioned serious symptoms of poisoning in several persons.

From the minute researches made by this committee, it resulted that these matters contained no trace of metallic bodies injurious to health, but it was remarked that they were over-run with mouldiness, which was spontaneously developed when they were made use of.

In a popular fête, which took place at Zurich in 1839, more than 600 persons partook of a repast, which consisted principally of cold roast veal and ham. Some time after having taken this food, almost all the guests were taken ill, and at the end of eight days most of them were confined to

their beds. A careful inquiry showed that the veal and ham, which had formed the basis of the meal, and were the cause of these poisonings, contained no trace of metallic poisons, but that they had undergone the commencement of decay.

In 1841, the Belgian papers reported that Captain Neygeen, of the Swedish ship *Neptune*, was seriously ill, with all the men of his crew, from having eaten raw, some decayed salt meat, which had been sold to him by a provision merchant of Antwerp.

In 1842, at Reims, a man named Etienne, and his wife, breakfasted on pork-butcher's meat, bought of a man named Lacourte. Some time after, both experienced symptoms of poisoning; and the same day similar symptoms manifested themselves in various persons who had eaten ham from the same pork-butcher.

Geiseler found analogous symptoms in seven persons, who had eaten of a raw ham in which mouldiness had developed itself; whilst another person who had eaten of the same ham, but *boiled*, experienced no ill effects.

Every one knows the distressing circumstances which resulted from the development of the *Oidium aurantiacum*, observed in 1843, by M. Payen, in the ammunition bread of the camp established near Paris.

Dr. Westerloff likewise mentions several cases of poisoning owing to the use of mouldy rye bread.

Orfila and Cadet de Gassicourt also mention having been several times called upon to analyse meats brought from pork-butchers of Paris, and which had occasioned poisoning, without being able to discover in them the slightest trace of mineral poison.

Finally, Dr. Olivier, of Angers, reports an observation of serious symptoms of poisoning from eating a meat-pie in an advanced state of mouldiness, in which he was unable, in the analysis which he made with the assistance of M. Barruel, to detect any trace of copper, or other poisonous substance.

This is not all. Symptoms have often also been observed, in different countries, produced by the use of rancid fats or decayed cheese, which poisonings, from the identity of the symptoms observed, seemed to be due, in all appearance, to the same cause as the foregoing. Thus, the police of Frankfort published, on the 10th of February, 1828, a special instruction in respect of numerous cases of poisoning which had been observed in that city in consequence of the use of spoiled cheeses, in which chemical reagents could detect no poisonous principles.

Toynbee and Fayrer have also recently mentioned cases of poisoning by pork, in which no metallic substance capable of explaining the symptoms could be found.

Finally, a great number of authors, amongst whom we may mention Sengbusch, Lichtenstadt, Fayrer, Galiay, Jameson, Simon, Edwards, Zenker, Jaehnichen, Westrumb, Combe, &c., mention numerous cases of poisoning produced by cheese, musty fats, ham and salted meats, or fish.

These last cases have been particularly observed in Russia, owing to the use of salted or smoked fish of the genus *Huso*, which were eaten raw in large quantities.

Several observations of this kind may also be found in the works of Autenrieth; and the 'Treatises on Toxicology' of Orfila and Dr. Christison, contain a good number of them. In the last place, MM. Chevallier and Duchesne have collected, in the *Annales d'Hygiène*, a host of analogous cases.

In all these circumstances, the identity of the conditions which occasion the production of the poison in these different nitrogenous substances, the similarity of the disorders which are produced in the economy, together with the invariably negative results of analysis, all these concordant data permit us, we think, to refer these poisonings to the same origin as that which communicates to decayed sausages their poisonous properties.

Dr. Krügelstein had, moreover, already observed that the poisonous principle of salted fish gives rise to symptoms quite similar to those determined by the sausage poison.

We may remark besides, that, in most of the cases which we have just mentioned the investigator has noticed, but without, however, suspecting it to contain the cause of the poisonings, the development of abundant mouldiness, or a peculiar state of alteration differing from putridity.—*Journal de Chimie Médicale*.

THE FOOD OF PLANTS.

THE ancients inquired, by very laborious researches, into the nature of vegetable growth; but the results were very unsatisfactory. The transmutation of air into the different bodies was held as an undoubted truth by Epicurus and Pythagoras; and Lucretius, in the beautiful poem, 'De Rerum Natura,' affirms the constant change of air into other substances which are resolved into air, and which is again decomposed into bodies by a continual and never-

ceasing rotation. Anaximenes also believed that all bodies were formed of air, or of aërial matters. Among the moderns, Lawrence contended for fire, Helmont for water, Bradley for air, and others for earth and nitre; and this uncertainty continued till more recent discoveries found that liquids, carbonaceous, gaseous, and other substances entered into the food of plants, and that water and air are compound substances—the former consisting of two elastic fluids or gases, viz., inflammable air or hydrogen, and vital gas or oxygen, or the oxide of hydrogen, and in weight 1+8 of oxygen; and the latter of two gases, oxygen and azote, and small quantities of aqueous vapour and of carbonic acid gas—this last substance being itself a compound elastic fluid, consisting of charcoal dissolved in oxygen. Tull thought that the earth reduced to very minute particles supplied the nourishment to vegetables, by attracting much moisture in that comminuted state; and that manures only acted mechanically in improving the texture and in crumbling the particles, and thus increasing the power of attraction. Duhamel adopted these opinions, and thought manures unnecessary; but he lived long enough to abandon that notion, and he finally concluded that no single material composed the food of plants. Succeeding philosophers have made many experiments on the growth of vegetables in different situations, in light and in darkness, and placed in substances of different qualities; and the results satisfied them that light and atmospheric air have great influence, and that water is essentially necessary to organized bodies, as without it no circulation of juices can be carried on, though it be only reckoned a vehicle, and not to constitute any part of the food itself. Ingenhousz contended for atmospheric air by many very ingenious reasonings, which have not yet been clearly proved or understood. Hassenfratz argued for carbon or charcoal being the chief food of plants, and derived from the soil by the roots, supplied to them in a state of solution or suspension from the brown sediment of dung after evaporation. This opinion was adopted by Kirwan, with the difference of supposing that plants derived carbon from the air by the act of vegetation, as carbonic acid gas is easily resolved into its two ingredients, oxygen and carbon. But common air has been shown to contain only a thousandth part of its bulk of carbonic acid gas, or, according to Lavoisier, none at all; and carbon forms only one fourth part of the fixed air itself. And it is doubtful if the brown mud of dung remaining after evaporation can be reckoned real coal without undergoing the action of fire; it may rather be called an extract,

as it may be again diffused through water, or dissolved as it was before the evaporation. Saussure would lead us to believe that plants obtain their earths from the soil; for beans, supported by distilled water, yielded only one third of the quantity of ashes afforded by those grown in the soil; while those fed by rain-water gave little more than one half of the latter quantity.

Thirty-two ounces of dry corn contained earths and metallic oxides as under—

	<i>Wheat.</i>	<i>Rye.</i>	<i>Barley.</i>	<i>Oats.</i>
Carbonate of lime	12·6	13·4	24·8	33·75
Silica	13·2	15·6	66·7	144·2
Carbonate of magnesia . . .	13·4	14·2	25·3	33·9
Alumina	0·6	1·4	4·2	4·5
Oxide of manganese	5·0	3·2	6·7	6·95
Oxide of iron	2·5	0·9	3·8	4·5

One hundred parts of ashes lixiviated gave as under—

	<i>Silex.</i>	<i>Calx and Muriatic.</i>	<i>Argil.</i>
Wheat	48	37	15
Barley	69	16	15
Oats	68	26	6
Bear, or bere	65	25	10
Rye	63	21	16
Potatoes	4	66	30
Red clover	37	33	30

Schroeder seems to prove that a part of the earths must be derived from vegetation, even where plants are deprived of any opportunity of deriving fixed principles from the soils where they grow. He planted vegetables in sulphur and in the oxides of antimony and zinc, containing no earthy matter, and placed them in boxes, with free access of light and air, with dust and rain excluded, and fed them with distilled water. He found that the plants contained more earthy matter than the seed from which they grew, and which he had previously analysed and ascertained the constituent parts. Plants growing in distilled water, and with free access of light and air, nearly doubled the portion of carbon they originally contained; but with little share of light, it was diminished from the latter quantity: and hence the plants must have derived nourishment from the air. But as they never perfect seeds, and soon decay, it is evident that air and water alone cannot support healthy and productive vegetation. Plants draw earthy matter from soils where no

earths of that kind exist ; as much as 65 per cent. of lime has been found in plants, of which substance no traces could be found in the ground ; and silica also, though none existed where the plants grew.

It has been found, by experiment, that plants do not absorb solutions of saline substances indiscriminately ; it may depend more on the degree of liquidity than on any discriminating power in the root ; but we are wholly unable to explain that so much a greater portion of water should be absorbed than of the salt held in solution. Saussure concluded that it does not so much depend on the earths which constitute the soil, as on the quantity of earths held in solution by the liquid part of it. So that earthy and saline matters existing in the soil, and being always found in plants, we can scarcely help considering them as a substance necessary to the growth of plants ; but without manures, no earths, salts, air, or water will support their proper growth. Giobert mixed four earths—silica, alumina, lime, and magnesia—in proportions to constitute a fertile soil, and supplied the plants growing in them with water ; but none grew till he applied water from a dung-hill. Lampadius planted vegetables in one pure earth, and supplied them with dung-hill water ; they grew and contained the usual earthy matters, notwithstanding the total absence of any of them in the soil. Plants have been resolved by chemical analysis, but no satisfactory conclusions as to what substances they derive from the earth as nourishment can be drawn from a knowledge of the constituent parts of organization. If a plant be strongly heated in a close vessel, allowing only smoke to escape, the residue is always the same, and is called charcoal or carbon by the chemists ; of this carbonaceous matter a considerable quantity is always found in garden-moulds and in rich lands, derived no doubt from the remains of vegetable substances of which the mould was originally formed. It is insoluble in water, and cannot enter in that state into plants ; hence we may suppose that it is rendered acceptable to their pores by a variety of changes and combinations.—*Farmer's Magazine*.

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire, Bruxelles,
For April, 1859.

DIFFICULT PARTURITION IN A COW.

IN this case the first attempt made was by unskilful hands. Exploration showed a false position of the limbs, but they could not be reached with the arm so as to be adjusted. The cow, therefore, was placed with her fore feet in the manger, and thus raised, it was found that the presentation was sacral, with the legs under the body. The legs were brought forward, one after another, and delivery was effected in less time than is required to describe it. The animal, however, died shortly after, and the autopsy showed a rent in the uterus five inches long, caused by the hook of the unskilful attendant.

In another case, where the arm could not reach the feet, the presentation being the same; the same means were resorted to of raising the fore part, when parturition was effected and the patient did well.

ENCEPHALO-ARACHNOIDITIS.

By M. HARDY, Student of the Fourth Year.

THE patient was a mare, nine years old. The symptoms were loss of appetite, somnolency, and yawning, the animal resting the head on the manger; from time to time there were nervous fits, when she would hang back and throw herself about, after which the stupor returned.

The diagnosis was encephalo-arachnoiditis.

The treatment consisted of bleeding from the jugular vein,

bathing the head with cold water, and purgatives as a revulsive to the digestive organs.

This treatment was continued for three days, when the symptoms becoming much aggravated, a strong blister was applied over the cranium, and small doses of calomel were administered.

The cure was effected in three weeks from this time.

In another case of the same kind, and in which the symptoms were more severe, the same treatment was adopted for a time without any good resulting, when *Nux vomica* was given, beginning with eight-gramme doses, which were gradually increased to twelve grammes. This produced tension of the muscles of the neck and slight convulsions, but no other effect was visible. The pulse had now become small and 54 in the minute, the respiration increased and irregular; there was also emaciation, and the fits had become almost constant. No more medicine was prescribed, but the owner being unwilling to have the animal destroyed, he sent him to a farm where he was kept on light food, and in a month after he was brought back perfectly recovered.

Journal des Vétérinaires du Midi, May, 1859.

OBSERVATIONS ON CONTRACTION OF THE FOOT OF THE HORSE; ITS PREVENTION OR CURE.

By N. LAFOSSE.

THE author begins by examining the theory of Mr. Bracy Clark on the elasticity of the foot, and while doing full justice to his talents, he is of opinion that it is an error to suppose that the foot expands at the heel in the way represented by the pasteboard model of the foot of the horse, constructed by that gentleman. Further, that this error has led to very serious consequences by the endeavours made to perpetuate this double movement of expansion and contraction.

Long before M. Raynal had shown to the Central Society the error of Mr. Bracy Clark, the author had made certain experiments which demonstrated the fallacy of the system. To effect this, the author took a foot, ampu-

tated at the knee, and bringing it as near as possible to the position of the natural unshod horse's foot he fixed it on a bench, perfectly level, causing the toe to rest against the wall, by putting a wedge between it and the wall. The leg was maintained in a vertical position by a kind of stirrup, made of leather, fixed in a ring in the wall. A wooden lever was then placed horizontally, in the end of which there was a shallow cavity to receive the upper end of the metacarpal bone. This lever was fixed with one end against the wall, in which a plate of iron was inserted so as to prevent it ascending, while the other end received the weight which represents the horse. This lever, as may be easily seen, is of the second order, that is, of unequal lengths, the resisting point being the shortest; the other, or longer one, to which the weight is applied, may be five to ten times the length, thus multiplying the weight in proportion from 300 to 600 kilo. All being thus disposed, and the distance between the heels being accurately ascertained a weight even to cause the rupture of the ligaments, tendons, &c., was applied which brought the fetlock in contact with the table without in the least increasing the space between the heels.

Without entering into the mechanism of the foot, the author remarks that it suffices for the purpose to have furnished the means to convince oneself that the foot does not expand at the heels when the weight is thrown on it, and that the shoe is not the cause of contraction, as has so long been asserted, taking for granted that the inflexibility of the iron prevents the expansion of the heels. The principal cause of contraction in the soliped is, according to the author, the want of moisture in the horse's hoof, consequent on domestication. In a state of nature these animals live on pasture grounds, more or less moist. Through the frequent rains they go to drink at the water-courses, when their hoofs come in contact with more or less humidity; moreover, they take that exercise which is so favorable to the healthy state of the foot. All this is changed in the domesticated state. Our horses, especially those used for pleasure, whose hoofs are more dense and less moist, are kept in the stable on dry litter, which is carefully renewed. They have also but little exercise, and that usually on dry, hard roads; in short, their hoofs have but little chance of being impregnated with that degree of moisture which is necessary to the conservation of their natural form. The walls consequently dry up on the outside, in spite of the ointment which is often applied to prevent them, and which no doubt it does to a certain extent, and the foot becomes contracted in the same way as when, de-

tached from the limb after death, it is exposed to the heat of the sun. Shoeing only contributes to the contraction, inasmuch as it keeps the hoof further from the ground, and thereby prevents the little moisture which might occasionally be imbibed; also by the shoe being applied hot, thereby causing the evaporation of the natural moisture from the parts, and the more so in proportion as the foot is more or less pared. In general there is too much paring away of the horn at the heels and bars, which last are the principal resistants to contraction. The frog, which, like a sponge, absorbs the moisture, being also kept from the ground, becomes dry, hard, and is unable to act as the elastic cushion to the foot, for which it was intended by nature. While, on the contrary, by not shortening the toes sufficiently, they thereby diminish the antagonism to the contraction of the posterior parts of the foot. This is principally the case when the shoe is applied during the growth of the parts; the iron, being nailed to the inferior surface of the hoof, prevents the gradual, but slow, increase of the size of the foot. This evil is greatly increased by the bad fitting of the shoes by unskilful smiths.

The preventive means recommended by the author are—loose stalls for young horses and mules, and, when contraction has begun, to let them stand on soft clay; wet felt to be applied to the feet, or stopping them with cow-dung; leather and felt soles under the shoes.

The remedy the author recommends, when the contraction is established, is the application of a sort of dilator, embracing the heels on the inside, and expanded at will by a screw, the shoe being provided with two clips on the inside of the heels, which fixes the bars. By this application the author states that he has made more than fifty cures, but it should not be had recourse to except in confirmed cases, in which only it can be efficacious. Every one must be aware, the author observes, that contraction is not always the consequence of affections in the foot, but that it also arises from disease existing which have their seat in other parts of the leg.

The author lays no claim to the invention of the dilator, which he thinks was invented by some blacksmith.

THE VETERINARIAN, SEPTEMBER 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat. —CICERO.

NEW ARMY WARRANT FOR INCREASING THE PAY, ETC., OF VETERINARY SURGEONS.

It affords us considerable gratification to be able to announce on the best authority that the new army warrant respecting the increase of pay, and earlier promotion of Veterinary Surgeons in Her Majesty's service, has received the sanction of the authorities at the War Office. In our next number we hope to give the details in full of this important document.

THE LATE MEETING OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

IN accordance with annual custom, we lay before our readers the award of the prizes of the Royal Agricultural Society, at its late meeting in the time-honoured town of Warwick. We had hoped to have been able to have done this in our last number, but our disappointment in this respect is the less to be regretted, since it is not so much our province to give early information on a subject of this kind as to record the facts for future reference. The meeting in every way may be said to have done honour to our great national society, and to have been fully equal in importance to any which had preceded it. Nay, in one thing alone did it fail even to surpass all those which had gone before it, *namely*, in the gross number of the visitors to the exhibition.

According to the official returns, 1,689 persons were admitted to the implement-yard on Tuesday, July 12th, at 2s. 6d. each, making the receipts for the day £210 17s. 6d.

On Wednesday 5,154 persons entered the same yard, and 3,386 the cattle-yard, the former paying 2s. 6d. and the latter 5s., the money received from the two sources being £1,489 2s. 6d.

On Thursday, the day on which both yards were thrown open on the payment of one sum, 19,902 persons paid for admission £2,487 18s. 6d.; and on Friday, when the entrance fee was reduced to 1s., the visitors were 25,446, and the

money taken £1.274, thus making a grand total of 55,577 visitors, and £5,461 18s. 6d. of money received.

The following table will show the progress made by the society since 1844 :

<i>Place of Meeting.</i>	<i>Receipts from visitors.</i>	<i>Cattle shown.</i>	<i>Implement exhibitors.</i>
Southampton	£2432	716	99
Shrewsbury	1682	527	93
Newcastle	2168	775	110
Northampton	2473	580	142
York	2514	866	146
Notwich	2360	799	145
Exeter	2493	769	118
Windsor	3397	1226	—
Lewes	1184	828	105
Gloucester	2734	931	128
Lincoln	3378	939	130
Carlisle	3260	1076	121
Chelmsford	2988	906	151
Salisbury	3447	1462	156
Chester	6187	1444	197
Warwick	5461	1601	246

From these returns it will be seen that the late exhibition at Warwick was the largest as regards the entries both of stock and implements which the society has ever held, but that the receipts fell off as compared with the Chester meeting.

This falling off was mainly due to the want of public spirit, and co-operation on the part of some of the railway companies who neglected to run excursion trains from the great manufacturing towns of the district of which Warwick is the centre. Under such circumstances we were not sorry to find that the formal "vote of thanks" to the railway directors, at the general meeting of the members of the society, was not allowed to pass without an expression of feeling of disappointment at their proceedings. We trust that good may arise out of this in another respect and that in future there will be fewer complaints of the lack of expertness in the transmission of the animals from their several localities to the place of meeting. A want of this led to the late arrival of many valuable animals at the show, worn out by fatigue, and in a condition ill-fitted for competition with those which were more fortunate.

The risk attending the exhibition of our unequalled flocks and herds, and porcine races, at the various and largely increasing meetings of agricultural societies, always great, will become fearfully augmented if monopoly is to take the place of public duty, and if exhibitors are to be without any certainty as to the time of the arrival of the animals at their destination.

It requires but little acquaintance with the proceedings of such meetings to see that the success or failure of them must mainly depend on the facilities given by the railway companies, and we trust that the agricultural community will spare no effort to bring the directors to a sense of their neglected duty.

Nor is it less important that the departure of the stock should be better provided for, and that animals, which individually are worth hundreds of pounds, should not be left, as at present, for hours at a time, waiting in the vicinity of the station, deprived of food and rest, before being despatched homewards. Experience proves to us that these evils are greatly increasing, and consequently it behoves us to give free expression to our sentiments on them, as on other things which belong to the conservation of the health of our domesticated animals.

The old adage of prevention being better than cure, belongs especially to the science of medicine; and the veterinary surgeon knows by sad experience that the most fatal diseases among his patients are often to be traced to fatigue and over-excitement, and especially when these causes are applied to animals in a plethoric habit of body, such as those which are brought together for public exhibition.

As a profession, we are also deeply interested in the success of agricultural associations, as they are rapidly leading to improved stock being kept by farmers throughout the country, who, under these altered circumstances, will give more heed to the health and well-being of their cattle, and hesitate to send less frequently than they now do, for the village cow-leach on the occurrence of disease. Besides, there are few of these societies which do not publicly recognise the value of our profession by appointing veterinary surgeons as inspectors at their

meetings, so as to guard against the transmission of hereditary diseases, and the substitution of animals of greater age for younger ones. The connexion between the science of veterinary medicine and that of agriculture is daily becoming more intimate, and the bonds of their union will become stronger in proportion as each honestly endeavours to promote the success of the other. Did space permit, a theme of this kind would draw forth many pertinent remarks, but we must be content with mere allusions to the subject on this occasion, hoping to find an early opportunity of returning to it again.

The following gentlemen acted as Judges of the Live Stock: **SHORT-HORN CATTLE:** James Topham, Charles Stokes, John Wright. **HEREFORD CATTLE:** E. L. Franklin, H. Trethewy. **DEVON CATTLE:** E. L. Franklin, H. Trethewy. **OTHER ESTABLISHED BREEDS OF CATTLE:** John Parkinson, John Clayden, J. B. Thompson. **AGRICULTURAL HORSES:** W. C. Spooner, C. Randell, J. Morley. **DRAY HORSES:** W. C. Spooner, C. Randell, John Morley. **OTHER HORSES:** Thos. Brooks, Henry Thurnall, J. H. Bland. **LEICESTER SHEEP:** Richard Hewitt, Nathaniel C. Stone, John Bodley. **SOUTHDOWN SHEEP:** H. Lugar, H. Footes, E. Trumper. **LONG-WOOLED SHEEP:** William Bartholomew, Henry Bateman, Henry Beavor. **SHORT-WOOLED SHEEP:** Josh. Blundell, James Rawlence, James Burgess. **PIGS:** J. Woolf, Rev. C. T. James, and J. S. Turner.

Their award was as under.

[SHORT-HORNED CATTLE.

CLASS I.—*To the owner of the best Bull, calved on or before the 1st of July, 1857, and not exceeding six years old.*

First prize of £30 to No. 10, John H. Bradburne, of Pipe Place, near Lichfield, Staffordshire.

Second prize of £15 to No. 15, The Hon. Colonel Pennant, M.P., of Penrhyn Castle, near Bangor, Carnarvon.

Third prize of £5 to No. 28, Stephen Gooch, of Honingham, near Norwich.

Highly Commended.—No. 3, Viscount Hill. No. 20, John T. Noakes.

Commended.—No. 16, Lord Feversham. No. 17, Miss E. Barroby. No. 21, William Todd. No. 31, Sir C. R. Tempest, Bart. No. 34, Jonas Webb.

CLASS II.—*To the owner of the best Bull, calved since the 1st of July, 1857 and more than one year old.*

First prize of £25 to No. 54, Lieutenant-Colonel Towneley, of Towneley Park, near Burnley, Lancaster.

Second prize of £15 to No. 43, Henry Ambler, of Watkinson Hall Farm, near Halifax, York.

Third prize of £5 to No. 51, John Lynn, of Stroxtun, near Grantham, Lincoln.

Highly Commended.—No. 40, John Armstrong.

Commended.—No. 56, John Hall.

CLASS III.—*To the owner of the best Bull-Calf, above six and under twelve months old.*

First prize of £10 to No. 70, William Fletcher, of Radmanthwaite, near Mansfield, Nottinghamshire.

Second prize of £5 to No. 62, Richard Stratton, of Broad Hinton, near Swindon, Wiltshire.

Highly Commended.—No. 63, Richard Stratton. No. 91, Lieut.-Col. Towneley.

Commended.—No. 73, William Wells.

CLASS IV.—*To the owner of the best Cow, in milk or in calf.*

First prize of £20 to No. 94, Richard Stratton, of Broad Hinton, near Swindon, Wiltshire.

Second prize of £10 to No. 112, Richard Eastwood, of Swinshawe, near Burnley, Lancaster.

Third prize of £5 to No. 109, William Todd, of Elphinstone Tower, near Tranent, Haddington.

Highly Commended.—No. 100, John Hutt,

Commended.—No. 102, The Hon. Colonel Pennant, M.P. No. 106 John Armstrong.

CLASS V.—*To the owner of the best Heifer, in milk or in calf, not exceeding three years old.*

First prize of £15 to No. 130, Lieutenant-Colonel Towneley, of Towneley Park, near Burnley, Lancaster.

Second prize of £10 to No. 123, Francis Fowler, of Henlow, near Biggleswade, Bedfordshire.

Third prize of £5 to No. 131, Lieutenant-Colonel Towneley, of Towneley Park, near Burnley, Lancaster.

Highly Commended.—No. 132, Lieut.-Col. Towneley. No. 120, Stewart Majoribanks. No. 122, James Douglas.

Commended.—No. 119, Stewart Majoribanks. No. 124, Captain Gunter. No. 128, Edward Bowly.

The Class generally Commended.

CLASS VI.—*To the owner of the best Yearling Heifer.*

First prize of £15 to No. 139, John Grundy, of The Dales, Stand, near Manchester.

Second prize of £10 to No. 145, James Douglas, of Athelstaneford Farm, near Drem, Haddington.

Third prize of £5 to No. 150, Captain Gunter, of the Grange, near Wetherby, York.

Highly Commended.—No. 135, Richard Stratton. No. 138, John Grundy. No. 147, The Hon. and Rev. T. H. Noel Hill. No. 158, Lieut.-Colonel Towneley. No. 162, Jonas Webb.

Commended.—No. 136, Richard Stratton, and the Class generally.

HEREFORD CATTLE.

CLASS I.—*To the owner of the best Bull, calved on or before the 1st of July, 1857, and not exceeding six years old.*

First prize of £30 to No. 168, Richard Hill, of Golding Hall, near Shrewsbury.

Second prize of £15 to No. 170, Lord Berwick, of Cronkhill, near Shrewsbury.

Third prize of £5 to No. 166, John Williams, of St. Mary's, Kingsland, near Leominster, Hereford.

Commended.—No. 164, His Royal Highness the Prince Consort. No. 171, John Naylor.

CLASS II.—*To the owner of the best Bull, calved since the 1st of July, 1857, and more than one year old.*

First prize of £25 to No. 183, John Naylor, of Leighton Hall, near Welshpool, Montgomery.

Second prize of £15 to No. 175, William Perry, of Cholstrey, near Leominster, Hereford.

Third prize of £5 to No. 177, Thomas Edwards, of Wintercott, near Leominster, Hereford.

CLASS III.—*To the owner of the best Bull-Calf, above six and under twelve months old.*

First prize of £10 to No. 197, His Royal Highness the Prince Consort.

Second prize of £5 to No. 207, Charles VEVERS, of Ivington Park, near Leominster, Hereford.

Highly Commended.—No. 206, Lord Berwick.

Commended.—No. 204, Lord Bateman. No. 205, Lord Bateman.

CLASS IV.—*To the owner of the best Cow, in milk or in calf.*

First prize of £20 to No. 211, Thomas Rea, of Westonbury, near Pembridge, Hereford.

Second prize of £10 to No. 218, Lord Berwick, of Cronkhill, near Shrewsbury.

Third prize of £5 to No. 221, Rees Keene, of Pencraig, near Caerleon, Monmouth.

Highly Commended.—No. 216, George Pitt.

Commended.—No. 215, George Pitt. 222, Philip Turner.

CLASS V.—*To the owner of the best Heifer, in milk or in calf, not exceeding three years old.*

First prize of £15 to No. 234, James Rea, of Monaughty, near Knighton, Radnor.

Second prize of £10 to No. 231, Lord Berwick, of Cronkhill, near Shrewsbury.

Third prize of £5 to No. 232, John Naylor, of Leighton Hall, near Welshpool, Montgomery.

Highly Commended.—No. 229, Lord Bateman. 226, Thomas Roberts.

CLASS VI.—*To the owner of the best Yearling Heifer.*

First prize of £15 to No. 239, Edward Price, of Court House, Pembridge, near Leominster, Hereford.

Second prize of £10 to No. 244, the Rev. Archer Clive, of Whitfield, near Hereford.

Third prize of £5 to No. 241, Edmund Wright, of Halston Hall, near Oswestry, Salop.

Highly Commended.—No. 238, Edward Price. 250, Philip Turner.

Commended.—No. 251, James Rea.

DEVON CATTLE.

CLASS I.—*To the owner of the best Bull, calved on or before the 1st of July, 1857, and not exceeding six years old.*

First prize of £30 to No. 256, Walter Farthing, of Stoney Court, near Bridgewater, Somerset.

Second prize of £15 to No. 261, John Quartly, of Molland, near South Molton, Devon.

Third prize of £5 to No. 254, Thomas White Fouracre, of Durston, near Taunton, Somerset.

Commended.—No. 259, James Merson.

CLASS II.—*To the owner of the best Bull, calved since the 1st of July, 1857, and more than one year old.*

First prize of £25 to No. 270, John Quartly, of Molland, near South Molton, Devon.

Second prize of £15 to No. 262, His Royal Highness the Prince Consort.

Third prize of £5 to No. 263, William Hole, of Hannaford, near Barnstaple, Devon.

Commended.—No. 265, Samuel Umbers.

CLASS III.—*To the owner of the best Bull-Calf, above six and under twelve months old.*

First prize of £10 to No. 272, William Hole, of Hannaford, near Barnstaple, Devon.

Second prize of £5 to No. 275, George Turner, of Barton, near Exeter.

Commended.—No. 273, Samuel Umbers.

CLASS IV.—*To the owner of the best Cow, in milk or in calf.*

First prize of £20 to No. 280, James Merson, of Brinsworthy, near North Molton, Devon.

Second prize of £10 to No. 279, Walter Farthing, of Stowey Court, near Bridgewater, Somerset.

Third prize of £5 to No. 281, James Quartly, of Molland House, near South Molton, Devon.

Highly Commended.—No. 277, Samuel Umbers.

CLASS V.—*To the owner of the best Heifer, in milk or in calf, not exceeding three years old.*

First prize of £15 to No. 288, James Quartly, of Molland House, near South Molton, Devon.

Second prize of £10 to No. 286, George Turner, of Barton, near Exeter.

Third prize of £5 to No. 282, Edward Pope, of Great Toller, near Maiden Newton, Dorset.

Highly Commended.—No. 284, James Hole.

The Class generally Commended.

CLASS VI.—*To the owner of the best Yearling Heifer.*

First prize of £15 to No. 296, John Quartly, of Molland, near South Molton, Devon.

Second prize of £10 to No. 290, His Royal Highness the Prince Consort.

Third prize of £5 to No. 291, John Mildon, of Woodington Farm, near Witheridge, Devon.

Highly Commended.—No. 297, James Quartly.

The Class generally Commended.

OTHER ESTABLISHED BREEDS.

Not including the Short-Horn, Hereford, or Devon Breed.

CLASS I.—*To the owner of the best Bull, calved on or before the 1st of July, 1857, and not exceeding six years old.*

Prize of £10 to No. 298, The Hon. Colonel Pennant, M.P., of Penrhyn Castle, near Bangor, Carnarvon.

Highly Commended.—No. 300, The Earl of Southesk.

Commended.—No. 301, His Royal Highness the Prince Consort.

CLASS II.—*To the owner of the best Bull, calved since the 1st of July, 1857, and more than one year old.*

Prize of £10 to No. 307, John Turville, of Hartley Park, near Alton, Hants.

Commended.—No. 306, Lord Sondes.

CLASS III.—*To the owner of the best Cow, in milk or in calf.*

Prize of £10 to No. 311, The Earl of Southesk, of Kinnaird Castle, near Brechin, Forfar.

Highly Commended.—No. 309, Richard Hawkes.

Commended.—No. 312, The Rev. R. T. Forester.

CLASS IV.—*To the owner of the best Heifer, in milk or in calf, not exceeding three years old.*

Prize of £10 to No. 316, Lord Sondes, of Elmham Hall, near Thetford, Norfolk.

CLASS V.—*To the owner of the best Yearling Heifer.*

Prize of £5 to No. 318, The Earl of Southesk, of Kinnaird Castle, near Brechin, Forfar.

Highly Commended.—No. 320, Lord Sondes.

HORSES.

AGRICULTURAL HORSES GENERALLY.

CLASS I.—*To the owner of the best Stallion for Agricultural purposes, foaled on or before the 1st of January, 1857.*

First prize of £25 to No. 337, John Hemmant, of Thorney Fen, near Peterborough, Cambridge.

Second prize of £15 to No. 333, Samuel Clayden, of Linton, Cambridge.

Third prize of £5 to No. 321, Henry Hitchcock, of Chittern All Saints, near Heytesbury, Wilts.

Highly Commended.—No. 350, Edward and Matthew Reed.

Commended.—No. 329, John Lowe. No. 335, Thomas Crisp.

CLASS II.—*To the owner of the best Stallion for Agricultural purposes, foaled in the year 1857.*

First prize of £20 to No. 358, Edward Holland, of Dumbleton Hall, near Evesham, Gloucester.

Second prize of £10 to No. 353, Robert Henry Wrinch, of Harkstead, near Ipswich, Suffolk.

CLASS III.—*To the owner of the best Mare and Foal for Agricultural purposes.*

First prize of £20 to No. 380, Charles Frost, of Wherstead, near Ipswich, Suffolk.

Second prize of £10 to No. 369, G. D. Badham, of Bulmer, near Sudbury, Suffolk.

Commended.—No. 383, N. G. Barthropp.

CLASS IV.—*To the owner of the best two-year old Filly for Agricultural purposes.*

First prize of £15 to No. 388, Leonard Wrinch, of Arwarton, near Ipswich, Suffolk.

Second prize of £10 to No. 396, His Royal Highness the Prince Consort.

DRAY-HORSES.

CLASS I.—*To the owner of the best Stallion, foaled on or before the 1st of January, 1857.*

First prize of £25 to 417, Benjamin Taylor, of New Road, Peterborough, Northampton.

Second prize of £10 to 409, John Hemmant, of Thorney Fen (near Peterborough), Cambridge.

CLASS II.—*To the owner of the best Stallion, foaled in the year 1857.*

First prize of £15 to 422, Thomas Hibbard, of Bishopstone, near Faringdon, Berkshire.

Second prize of £5 to 420, William Buller, of Hanwell Fields, near Banbury, Oxfordshire.

Commended.—No. 421, John Manning.

CLASS III.—*To the owner of the best Mare, with her foal at her feet.*

First prize of £20 to 425, William Lowrie, of Cadoxton, near Cardiff, Glamorgan.

CLASS IV.—*To the owner of the best Filly, foaled in the year 1857.*

First prize of £10 to 430, Thomas Russell, of Hodwell Manor, near Southam, Warwick.

OTHER HORSES.

CLASS I.—*To the owner of the best thorough-bred Stallion for getting hunters.*

First prize of £25 to No. 435, John Wadlow, of Shiffnal, Salop.

Second prize of £15 to No. 433, William Barnett, of Bay's Hill Lawn, near Cheltenham, Gloucester.

CLASS II.—*To the owner of the best brood Mare, with foal at foot, or in foal, for breeding hunters.*

First prize of £20 to No. 450, Charles Aikin Holland, of Hartford Hill, near Northwich, Cheshire.

Second prize of £10 to No. 454, W. Shaw, of Far Coton, near Northampton.

CLASS III.—*To the owner of the best brood Mare for breeding hackneys.*

First prize of £15 to No. 460, Walter Coleman, of Kingsbury Hall, near Tamworth, Warwick.

Second prize of £5 to No. 465, Samuel Wallis, of Barton Seagrave, near Kettering, Northampton.

SHEEP.

LEICESTERS.

CLASS I.—*To the owner of the best Shearling Ram.*

First prize of £20 to No. 476, William Sanday, of Holme Pierrepont, near Nottingham.

Second prize of £10 to No. 479, William Sanday, of Holme Pierrepont, near Nottingham.

Third prize of £5 to No. 477, William Sanday, of Holme Pierrepont, near Nottingham.

CLASS II.—*To the owner of the best Ram of any other age.*

First prize of £20 to No. 508, Thomas Edward Pawlett, of Beeston, near Sandy, Beds.

Second prize of £10 to No. 507, Thomas Edward Pawlett, of Beeston, near Sandy, Beds.

Third prize of £5 to No. 519, William Sanday, of Holme Pierrepont, near Nottingham.

Highly Commended.—No. 518, William Sanday.

Commended.—No. 517, William Sanday.

CLASS III.—*To the owner of the best pen of five Shearling Ewes, of the same flock.*

First prize of £20 to No. 555, William Sanday, of Holme Pierrepont, near Nottingham.

Second prize of £10 to No. 554, William Sanday, of Holme Pierrepont, near Nottingham.

Third prize of £5 to No. 559, Lieutenant-Colonel Inge, of Thorpe Constantine, near Tamworth, Staffordshire.

SOUTH-DOWNS.

CLASS I.—*To the owner of the best Shearling Ram.*

First prize of £20 to No. 569, the Duke of Richmond, of Goodwood, near Chichester, Sussex.

Second prize of £10 to No. 592, Jonas Webb, of Babraham, near Cambridge.

Third prize of £5 to No. 591, Jonas Webb, of Babraham, near Cambridge.

Highly Commended.—No. 571, The Duke of Richmond. No. 568, The Duke of Richmond.

Commended.—No. 564, William Rigden. No. 565, William Rigden. No. 596, Jonas Webb.

CLASS II.—*To the owner of the best Ram of any other age.*

First prize of £20 to No. 601, the Duke of Richmond, of Goodwood, near Chichester, Sussex.

Second prize of £10 to No. 598, William Rigden, of Hove, near Brighton.

Third prize of £5 to No. 599, William Rigden, of Hove, near Brighton.

Highly Commended.—No. 612, Sir R. G. Throckmorton, Bart.

Commended.—No. 600, William Rigden.

CLASS III.—*To the owner of the best pen of five Shearling Ewes, of the same flock.*

First prize of £20 to No. 614, the Duke of Richmond, of Goodwood, near Chichester, Sussex.

Second prize of £10 to No. 615, the Duke of Richmond, of Goodwood, near Chichester, Sussex.

Third prize of £5 to No. 613, William Rigden, of Hove, near Brighton.

Highly Commended.—No. 622, Sir R. G. Throckmorton, Bart.

Commended.—No. 620, The Duke of Beaufort.

LONG-WOOLED SHEEP.

Not qualified to compete as Leicesters.

CLASS I.—*To the owner of the best Shearling Ram.*

First prize of £20 to No. 660, Robert Garne, of Aldsworth, near Northleach, Gloucester.

Second prize of £10 to No. 662, Robert Garne, of Aldsworth, near Northleach, Gloucester.

Third prize of £5 to No. 625, George Fletcher, of Shipton Sollars, near Cheltenham, Gloucester.

Highly Commended.—No. 659, Robert Garne. 642, James Walker. 636, John Gillett.

Commended.—No. 626, George Fletcher. 627, George Fletcher. 630, Edward Handy. 632, Edward Handy. 637, John Gillet. 653, Thomas Porter.

CLASS II.—*To the owner of the best Ram of any other age.*

First prize of £20 to No. 681, Thomas Porter, of Baunton, near Cirencester, Gloucester.

Second prize of £10 to No. 684, Robert Garne, of Aldsworth, near Northleach, Gloucester.

Third prize of £5 to No. 667, George Fletcher, of Shipton Sollars, near Cheltenham.

Highly Commended.—No. 671, Edward Handy. 672, Edward Handy. 680, Thomas Porter.

Commended.—No. 669, William Smith. 683, Robert Garne. 685, Robert Garne.

CLASS III.—*To the owner of the best pen of five Shearling Ewes, of the same flock.*

First prize of £20 to No. 691, Thomas Walker, of Yanworth, near Northleach, Gloucester.

Second prize of £10 to No. 692, William Lane, of Broadfield Farm, near Northleach, Gloucester.

Third prize of £5 to No. 686, George Fletcher, of Shipton Sollars, near Cheltenham, Gloucester.

Highly Commended.—No. 690, T. Beale Browne. 693, William Lane.

Commended.—No. 689, T. Beale Browne. 694, William Lane. 695, John King Tombs.

SHORT-WOOLED SHEEP.

Not qualified to compete as South-Downs.

CLASS I.—*To the owner of the best Shearling Ram.*

First prize of £20 to No. 706, William Humfrey, of Oak Ash, Chaddleworth, near Wantage, Berkshire.

Second prize of £10 to No. 710, William Humfrey, of Oak Ash, Chaddleworth, near Wantage, Berkshire.

Third prize of £5 to No. 708, William Humfrey, of Oak Ash, Chaddleworth, near Wantage, Berkshire.

Highly Commended.—No. 709, William Humfrey. No. 739, Charles Howard. No. 748, John Bryan. No. 749, Joseph Druce.

Commended.—No. 696, The Duke of Marlborough. No. 700, William Gillett. No. 720, Sampson Byrd.

CLASS II.—*To the owner of the best Ram, of any other age.*

First prize of £20 to No. 788, Samuel Druce, of Eynsham, near Oxford.

Second prize of £10 to No. 770, William Humfrey, of Oak Ash, Chaddleworth, near Wantage, Berkshire.

Third prize of £5 to No. 773, George Adney, of Harley, near Much Wenlock, Salop.

Highly Commended.—No. 765, John Bryan. No. 766, John Bryan. No. 767, John Bryan. No. 768, William Humfrey. No. 777, Thomas Horton.

Class generally Commended.

CLASS III.—*To the owner of the best pen of five Shearling Ewes, of the same flock.*

First prize of £20 to No. 795, William Humfrey, of Oak Ash, Chaddleworth, near Wantage, Berkshire.

Second prize of £10 to No. 812, Stephen King, of Old Hayward Farm, near Hungerford, Berks.

Third prize of £5 to No. 800, William Browne Canning, of Chisledon, near Swindon, Wilts.

Highly Commended.—No. 794, William Humfrey. No. 796, Thomas Edmond Miller. No. 804, James and Edward Crane. No. 808, John W. Brown. No. 814, William F. Bennett. No. 817, John Moore.

Class generally Commended.

PIGS.

CLASS I.—*To the owner of the best Boar of a large breed.*

First prize of £10 to No. 820, John Harrison, jun., of Heaton Norris, near Stockport, Lancaster.

Second prize of £5 to No. 830, John Woodcock, of Netherhampton, near Salisbury.

Third prize of £3 to No. 826, Michael Gavins, of the Fox Inn, Woodhouse Carr, near Leeds.

Highly Commended.—No. 828, Captain Curtis.

CLASS II.—*To the owner of the best Boar of a small breed.*

First prize of £10 to No. 845, His Royal Highness the Prince Consort.

Second prize of £5 to No. 825, Thomas Crisp, of Butley Abbey, near Wickham Market.

Third prize of £3 to No. 831, John Holdway, of Weston, near Bath, Somerset.

Highly Commended.—No. 840, Thomas Pearson, Beestone, Leeds.

Class generally Commended.

CLASS III.—*To the owner of the best Breeding Sow of a large breed.*

First prize of £10 to No. 862, Sir R. G. Throckmorton, Bart., of Buckland, near Farringdon, Berks.

Second prize of £5 to No. 852, William B. Wainman, of Carhead, near Cross Hills, York.

Third prize of £3 to No. 864, John Woodcock, of Netherhampton, near Salisbury.

Highly Commended.—No. 854, John Harrison, jun. No. 857, John Spencer.

CLASS IV.—*To the owner of the best Breeding Sow of a small breed.*

First prize of £10 to No. 894, Thomas Crisp, of Butley Abbey, near Wickham Market, Suffolk.

Second prize of £5 to No. 901, George Turner, of Barton, near Exeter.

Third prize of £3 to No. 897, Thomas Crisp, of Butley Abbey, near Wickham Market, Suffolk.

Class generally Highly Commended.

CLASS V.—*To the owner of the best pen of three Breeding Sow-pigs of a large breed, of the same litter, above four and under eight months old.*

First prize of £10 to No. 912, George B. Morland, of Chilton Farm, near Harwell, Berks.

Second prize of £5 to No. 913, William James Sadler, of Benthum Calcutt, near Cricklade, Wilts.

Highly Commended.—No. 918, Edward Bowly. No. 919, William Hewer.

Commended.—No. 920, William Hewer.

CLASS VI.—*To the owner of the best pen of three Breeding Sow-Pigs of a small breed, of the same litter, above four and under eight months old.*

First prize of £10 to No. 922, His Royal Highness the Prince Consort.

Second prize of £5 to No. 923, Robert H. Watson, of Bolton Park, near Wigton, Cumberland.

SPECIAL PRIZES.

Offered by the Warwick Local Committee.

CATTLE BEST ADAPTED FOR DAIRY PURPOSES.

CLASS I.—*To the owner of the best Bull, of any pure breed, calved on or after the 1st of January, 1858, and not less than twelve months old on the 1st of July next.*

First prize of £20 to No. 928, Henry Ambler, of Watkinson Hall Farm, near Halifax, York.

Second prize of £10 to No. 933, John Kay Farnworth, of the Oak Farm, Alderley Edge, near Chorley, Cheshire.

Third prize of £5 to No. 930, Lord Feversham, of Duncombe Park, near Helmsley, York.

Highly Commended.—No. 934, Joseph Heaward, Woodville Reddish, Stockport.

Commended.—No. 925, The Rev. Charles William Holbech. 927, James H. Langston, M.P.

CLASS II.—*To the owner of the best pair of Cows (without restriction as to breed), in milk or in calf.*

First prize of £20 to No. 940, J. H. Langston, M.P., of Sarsden House, near Chipping Norton, Oxon.

Second prize of £10 to No. 941, The Hon. Colonel Pennant, of Penrhyn Castle, near Bangor, Carnarvon.

Third prize of £5 to No. 944, Edmund Lythall, of Radford Hall, near Leamington, Warwick.

Highly Commended.—No. 942, Henry Ambler. 937, Joshua Price.

Commended.—No. 946, Henry Rawlins. 947, Edward Bowly.

CLASS III.—*To the owner of the best pair of Heifers, of a pure breed, in milk or in calf, under three years old.*

First prize of £20 to No. 952, Joshua Price, of Featherstone, near Wolverhampton, Staffordshire.

Second prize of £10 to No. 953, John Hutt, of Water Eaton, near Oxford.

Third prize of £5 to No. 957, John King Tombs, of Langford, near Lechlade, Gloucester.

Highly Commended.—No. 955, J. H. Langston, M.P. 959, John Lane.

Commended.—No. 954, John Hutt. 958, William Woodward.

CLASS IV.—*To the owner of the best pair of Yearling Heifers, of a pure breed.*

First prize of £20 to No. 965, Henry Ambler, of Watkinson Hall, near Halifax, York.

Second prize of £10 to No. 964, Hon. Colonel Pennant, M.P., of Penrhyn Castle, near Bangor, Carnarvon.

Third prize of £5 to No. 966, William Fletcher, of Radmanthwaite, near Mansfield, Notts.

Highly Commended.—No. 963, Richard Stratton.

LONG-HORNED CATTLE.

CLASS V.—*To the owner of the best Bull of the pure Long-horn breed.*

First Prize of £10 to No. 968, Josh. Holland Burbery, of the Chase, near Kenilworth, Warwick.

Second prize of £5 to No. 970, Michael Taverner, of Upton, near Nuneaton, Warwick.

Commended.—No. 969, Richard Hawkes.

CLASS VI.—*To the owner of the best pair of Cows of the pure Long-horn breed.*

First Prize of £10 to No. 978, Lieut.-Col. Inge, of Thorpe, Constantine, near Tamworth, Staffordshire.

Second prize of £5 to No. 977, John Godfrey, of Wigston Parva, near Nuneaton, Leicester.

Highly Commended.—No. 975, E. T. Twycross.

Commended.—No. 974, E. T. Twycross. No. 976, J. H. Burbery.

HORSES.

N.B.—The stallions (excepting the Ponies) must have served or shall serve for at least one season in the Counties of Warwick, Oxford, Northampton, or Berks.

CLASS I.—*To the owner of the best Stallion for Agricultural purposes, foaled before the 1st January, 1857.*

First prize of £20 to No. 983, John Manning, of Orlingbury, near Wellingborough, Northampton.

Second prize of £10 to No. 981, Robert Spencer, of Shuckburgh Lodge, near Daventry, Warwick.

Commended.—No. 980, James Morrell. No. 984, Thomas Baldwin. No. 985, Joseph Ball.

CLASS II.—*To the owner of the best Stallion for the same purposes, foaled in 1857.*

First prize of £15 to No. 988, William Buller, of Hanwell Fields, near Banbury, Oxon.

Second prize of £5 to No. 989, Thomas Crisp, of Butley Abbey, near Wickham Market, Suffolk.

Commended.—No. 990, William Wynn.

CLASS III.—*To the owner of the best pair of Agricultural Horses, Mares or Geldings.*

First prize of £10 to No. 994, John Gay Attwater, of Hallingwood Farm, Cubberley, near Cheltenham and Gloucester.

Second prize of £5 to No. 995, John Beasley, of Chapel Brampton, near Northampton.

Highly commended.—No. 996, C. B. and J. W. Robinson.

Commended.—No. 993, James Dormer.

CLASS IV.—*To the owner of the best one-year old Filly or Gelding for Agricultural purposes.*

The prize of £10 to No. 998, William Lowrie, of Cadoxton, near Cardiff, Glamorgan.

CLASS V.—*To the owner of the best Mare or Gelding, of four years and upwards, for Hunting purposes.*

First prize of £20 to No. 1003, Walter Coleman, of Kingsbury Hall, near Tamworth, Warwick.

Second prize of £10 to No. 1015, Lord Berners, of Keythorpe Hall, near Leicester.

Highly commended.—No. 1010, John B. Booth. No. 1012, J. T. Arkwright. No. 1022, R. F. Formby.

Class generally Commended.

CLASS VI.—*To the owner of the best Stallion Pony, not exceeding fourteen hands high.*

First prize of £10 to No. 1028, Sir Pyers Mostyn, Bart., of Talacre, near Rhyl, Flintshire.

Second prize of £5 to No. 1026, James Creswell Wall, of Redland Lodge, near Bristol.

Highly Commended.—No. 1027, James Creswall Wall. No. 1035, Denis Sullivan.

Class generally Commended.

SHROPSHIRE SHEEP.

CLASS I.—*To the owner of the best Shearling Ram.*

First prize of £20 to No. 1049, John Coxon, of Freeford Farm, near Lichfield, Staffordshire.

Second prize of £10 to No. 1075, Henry Sheldon, of Braile's House, near Shipston-on-Stour, Warwick.

Third prize of £5 to No. 1060, Thomas Horley, jun., of the Fosse, near Leamington.

Highly commended.—No. 1047, James and Edward Crane. No. 1050, John Coxon.

Commended.—No. 1053, Thomas Mansell. No. 1067, Pryce William Bowen.

CLASS II.—*To the owner of the best Ram of any other age.*

First prize of £20 to No. 1081, Mrs. Baker, of Grendon, near Atherstone, Warwick.

Second prize of £10 to No. 1086, James and Edward Crane, of Shrawardine, near Shrewsbury.

Third prize of £5 to No. 1080, George Adney, of Harley, near Much Wenlock, Salop.

Highly commended.—No. 1085, J. Coxon and C. W. Thacker. No. 1091, The Earl of Dartmouth. No. 1096, Thomas Horley, jun.,

The Class generally Commended.

CLASS III.—*To the owner of the best pen of five Theaves.*

First prize of £15 to No. 1104, Edward Holland, of Dumbleton Hall, near Evesham, Gloucester.

Second prize of £5 to No. 1103, James and Edward Crane, of Shrawardine, near Shrewsbury.

Highly Commended.—No. 1112, Thomas Horley, jun.

The Class generally Commended.

PIGS.

CLASS I.—*To the owner of the best Berkshire Boar.*

First prize of £10 to No. 1126, William Hewan, of Sevenhampton, near Highworth, Wilts.

Second prize of £5 to No. 1123, Edward Bowly, of Siddington House, near Cirencester, Gloucester.

The Class generally Highly Commended.

CLASS II.—*To the owner of the best Berkshire Sow.*

First prize of £10 to No. 1143, William Hewan, of Sevenhampton, near Highworth, Wilts.

Second prize of £5 to No. 1129, William James Sadler, of Bentham Calcutt, near Cricklade, Wilts.

The Class generally Highly Commended.

CLASS III.—*To the owner of the best pen of Five Breeding Pigs, of the Berkshire breed, of the same litter, not less than three nor more than five months old on the 1st July next.*

First prize of £15 to No. 1147, Joseph Smith, of Henley-in-Arden, Warwick.

Second prize of £10 to No. 1148, Joseph Smith, of Henley-in-Arden, Warwick.

The Class generally Highly Commended.

CLASS IV.—*To the owner of the best pen of Five Breeding Pigs, of any other large breed, of the same litter, not less than three nor more than five months old on the 1st July next.*

First prize of £15 to No. 1150, William B. Wainman, of Carhead, near Cross Hills, York.

CLASS V.—*To the owner of the best pen of Five Breeding Pigs, of a small breed, of the same litter, not less than three nor more than five months old on the 1st July next.*

First prize of £15 to No. 1154, the Hon. Col. Pennant, M.P., of Penrhyn Castle, near Bangor, Carnarvon.

Second prize of £10 to No. 1159, Robert H. Watson, of Bolton Park, near Wigton, Cumberland.

The Class generally Commended.

HOME CIRCUIT.

HERTFORD, July 16th.

Before Mr. JUSTICE BLACKBURN and a Common Jury.

CLEOBURY v. TATTERSALL AND OTHERS.

THIS was an action to recover £42. 1s. from the defendants, upon a warranty of a horse.

Mr. Edwin James, Q.C., Mr. Serjeant Parry, and Mr. Hannen appeared for the plaintiff; Mr. Hawkins, Q.C., and Mr. Malcolm were for the defendants.

The plaintiff in this action is an elderly gentleman, an attorney, and the defendants are the proprietors of the well-known establishment at Hyde Park-corner for the sale of horses. The action was brought to recover the sum mentioned, which had been paid by the plaintiff for a horse called Bantam, which was described in the catalogue of the sale as being "a clever hack and hunter," and the plaintiff sought to recover his money, on the ground that the horse in question did not answer the description given of him. It appeared that the plaintiff went to Messrs. Tattersall's on the day before the sale took place, and saw the horse in question, and after he had seen his paces he thought he would suit him, and attended the sale, which took place on the 12th of May, and the animal was knocked down to him at forty-one guineas. He at once had a saddle and bridle put on him, and rode him to his residence at Bayswater, and on the way he said that he stumbled twice, and "blundered about," and he consequently rode him on the following

day to Mr. Field's, the veterinary surgeon, who gave a certificate that he was lame in both fore legs, and the plaintiff sent him back to the yard. Mr. Tattersall, however, refused to receive him, on the ground that there had been no warranty of soundness, and that the horse really was what he had been represented to be—"a clever hack and hunter." The plaintiff, in his cross-examination, admitted that he saw the horse walked and trotted in Messrs. Tattersall's yard, and he did not observe any appearance of lameness about him.

Mr. W. Field, veterinary surgeon, deposed that the horse in question was brought to him for examination on the 13th of May. He was lame in both his fore legs, the near one being the worst. In his opinion the lameness was caused by a disease of the feet, called the navicular disease. A horse in such a condition was certainly not properly described as "a clever hack." He would not be safe to ride.

Cross-examined—Witness knew nothing of the science of horse dealing, and could not say how horse dealers would understand the expression "a clever hack." In his opinion a horse could not be considered "clever" who was not perfectly sound in sight, wind, and limb. It was very rare to find a horse without some defects. A horse might be a very good racehorse and win many races and yet be very lame, but he should not consider such a horse would be properly described as a "clever" racehorse. He believed Phosphorus won the Derby when he was lame.

Mr. G. Varnell, assistant-professor at the Royal Veterinary College, concurred in the opinion of Mr. Field as to the lameness of the horse, and also stated that it must have existed two or three months. He was not aware what interpretation would be put upon the term "clever hack" among horse-dealers, but he should certainly say that a horse was more likely to be "clever" when he was sound than when he was unsound.

Cross-examined—A horse undoubtedly might be a "clever" horse when he was not perfectly sound. A horse suffering from navicular disease might be used, and he might be "clever," but he would be "cleverer" without it.

Mr. Sewell, who was in the habit of shoeing the plaintiff's horses, proved that he examined the horse when he was brought home, and he found that he was lame in both fore legs. He advised Mr. Cleobury not to ride him any more, and told him if he did, he would be very likely to fall with him and break his neck.

Mr. Hawkins, at the close of the case for the plaintiff, submitted that there was nothing to go to the jury, as there was no evidence of any contract on the part of the defendants to return the money if the horse was unsound.

Mr. Justice Blackburn said he would reserve the point. He thought there was evidence of a contract; but if he was wrong the defendants would have leave to move for a nonsuit, if such a course should become necessary.

Mr. Hawkins then addressed the jury for the defendants, and he said he could not help expressing his surprise that his learned friend should have charged them with having wilfully given a false description of this horse in their catalogue. Every one who knew the manner in which the business of Messrs. Tattersall had been conducted, and the high character for honour and integrity they possessed in the estimation of the public, must know that there was not the slightest foundation for such an accusation. The fact was that thousands of horses passed through their hands every year, but they knew nothing about them,

and they were described in the catalogues of the sales according to the representations of the owners, and Messrs Tattersall were not in any way responsible for those representations. With regard to the horse in question, he was sent up from the country with the description of "a clever hack and hunter," and he believed he should be able to show that he deserved that description, and as to his being lame that had nothing to do with the matter, because everybody knew that a horse might be a very good horse across country, or on a country road, who would stumble and go lame on the London stones or on a hard road. The plaintiff had every opportunity of examining the horse before he purchased him, and he admitted that at that time he saw no appearance of lameness, and he supposed the fact was, that when he got him home he found the horse did not suit him, or he had changed his mind, and he consequently got a certificate of unsoundness from Mr. Field, and upon that ground sought to compel Mr. Tattersall to take the horse back and return him his money. The learned counsel then proceeded to argue that the description of a "clever hack" had nothing whatever to do with soundness, and he said it was notorious that a great many horses were very clever and useful animals, and worth large sums of money, who were very far from what would be considered sound or without blemish.

Mr. Edmund Tattersall, one of the defendants, was then examined. He stated that he had conducted the business personally for eight years, and sold a great number of horses every year. The horse in question was sent up from the country by a gentleman named Pearse, and he was sold in the usual way according to his description, and witness knew nothing at all about him. In witness's experience a great many valuable hunters were lame, and the more clever they were the more likely they were to become lame, as they were more used.

Cross-examined—Witness had no idea that this horse was lame, and he did not believe that he was lame when he sold him.

Mr. J. R. Cox, veterinary surgeon, of Mount-street, Grosvenor-square, stated that he saw the horse at Mr. Cleobury's stables on Saturday last. He was walked and trotted, and witness observed that he was slightly lame in both fore legs, but the lameness was of such a character as could only be detected by a professional man or one a good deal accustomed to horses. The horse appeared very quiet, and went very well over some uneven ground, and he only stumbled once, which was owing to his being fresh and going too fast for the groom. He stumbled upon some rising ground, but recovered himself very quickly. There was nothing the matter with his feet, except that they were narrow, and the animal appeared to him to possess all the appearance of a good hack; there was nothing at all about him likely to render him unsafe, and witness would have no hesitation in using him as a hack. In witness's opinion the horse was not suffering from navicular disease. He had had a great deal of experience in matters connected with horses, and he always understood the term "clever" to apply to the training and education of a horse, and also to his disposition, and he never understood the term to have any reference to soundness. It was a very common thing for horses which were known as clever hacks or hunters to be unsound.

Cross-examined—In witness's opinion the lameness in this case was occasioned by splints, and not by navicular disease. He had no hesitation in saying that a horse might be fairly described as "clever," notwithstanding he was lame.

Re-examined-- Witness's father and brother were extensive dealers

in horses, and he had seen a good many horse transactions, and this was the first time he had ever heard it attempted to be made out that "cleverness" was in any way connected with soundness.

Mr. F. J. Pearse deposed that he resided near Chippenham, and he sent the horse in question to Messrs. Tattersall's for sale. He purchased him at the Warwick spring-steeplechase, and gave sixty guineas for him, and he used him as a cover hack, and also with hounds, down to the time he sold him. He rode him three times with hounds, and upon one occasion had a particularly good run. Witness was sorry to say he weighed sixteen stone. (A laugh.) He therefore required a good horse to carry him, and he considered this horse carried him remarkably well. He was not lame, and did not show any symptoms of lameness when he sent him to Messrs. Tattersall, and two days before he went away, witness rode him thirty-seven miles on the turnpike road, and was never carried better. He generally made a draught of his horses at the end of the season, and the reason this horse was sold was that he considered he was not strong enough to carry him, and, as he had several stronger horses, this one was draughted off. The horse had a high character when he bought him.

Mr. Picard, stud-groom to a gentleman named Holford, residing near Mr. Pearse, stated that he rode the horse while he was in that gentleman's possession, both on the road and over some fences, and he carried him very well indeed. If his master had wanted such a horse he should have had no hesitation in advising him to buy him, and he would have given a hundred guineas for him.

Cross-examined—There was nothing at all the matter with the horse. Witness had had very great experience with horses, and he knew that it frequently happened that the lamer a horse was the more clever he was. (A laugh.)

Mr. Hawkins, in summing up the defendant's case, said the only point for the jury was whether or not this horse deserved the description of a "clever" horse, and that they had nothing whatever to do with his soundness or unsoundness, and he submitted that it had been abundantly made out that the horse was a clever horse notwithstanding his lameness, and the defendants were consequently entitled to a verdict.

Serjeant Parry made a very able reply upon the whole case, and he said it appeared to him that the simple question was whether a horse that was proved to stumble and to be incurably lame could be used with any comfort or safety, and whether such an animal could be fairly described as a "clever" hack.

Mr. Justice Blackburn, in summing up, said he need not trouble the jury with the points of law that were reserved, and the main question for them to consider was whether the horse answered the description given of him in the catalogue. He should certainly rule that in law the description did not amount to a warranty of soundness, but at the same time that it did amount to a warranty that the horse was at all events safe and fit for the purposes of a riding hack. Looking at the whole of the evidence, therefore, it would be for them to say whether at the time the horse was sold he was fairly entitled to the description of a clever hack.

The jury, after a short deliberation, said they were of opinion that the plaintiff, from the description of the animal, had a right to expect something different from the animal he received.

A verdict was then taken for the plaintiff, but judgment was stayed, the learned Judge giving the defendants leave to move to enter a nonsuit; in the event of the Court being of opinion that he was wrong, in law, in his ruling with regard to the contract.

BICESTER COUNTY COURT.

Before JOHN HERBERT KOE, Esq.

CHRONIC DISEASE OF THE MESENTERY.

PARROTT *v.* ELLIOTT.

THIS action was brought to recover £27, the price paid for a brown mare, purchased of defendant (who gave a written warranty). The mare had died a few months after the purchase, and plaintiff alleged that unsoundness must have existed at the time of purchase. Mr. Osmond appeared for the plaintiff and Mr. Griffiths for the defendant.

Edwin Parrott, of Piddington, deposed that he purchased the mare of Mr. Elliott on the 8th of October last, and had a written warranty with her. The warranty was produced and read. It "warranted the mare sound and a good worker." After he got the mare home, she did not turn out well; could not do a day's work in a proper manner, and was very weak. She had the colic a fortnight after he bought her; she appeared to get better, but the symptoms returned again, and seemed to come periodically. The mare would not eat her food properly, held her head down and often staggered about.

This evidence was corroborated by John Allen, the carter on the farm, who further stated that the mare was generally bad after drinking, and could scarcely get back to the stable.

Edward Parrott, brother to plaintiff, also deposed to the illness and weakness of the animal. The mare eventually died on the 1st of February. His brother was ill at the time and was not able to leave his room, and therefore he attended at the farm, and assisted in opening the mare. There was a large quantity of matter in the bowels, which he thought must have proceeded from a tumour.

George Armatage, of Bicester, veterinary surgeon, said that he was called in to attend the mare on the 22d of December. The symptoms appeared to be those of colic, or gripes, but from the protracted pain the animal seemed to endure, and the great weakness and other symptoms attending it, he thought there must be something beyond such an ordinary cause of suffering. The mare was, however, treated for colic, and appeared to get better. He did not see the mare again. A portion of the intestines were afterwards submitted to him for examination. He found the mesentery very much thickened, and that a large sac had formed in it, which he had no doubt contained the matter referred to by one of the witnesses. He should call it "tuberculous disease of the mesentery," and it was quite sufficient to have caused death. It was a disease of very tardy growth, and had probably been coming on for many months.

William Cosins, farrier, of Brill, and *Stephen Cripps*, carpenter, were called, and deposed to the mare having similar fits of colic while in possession of the defendant and previous to the sale to the plaintiff.

Joseph Elliott, the defendant, stated that the mare was sound and a good worker when he sold her. He admitted that the mare had the colic in May last. He sent her on that account to Mr. Lepper's Infirmary, at Aylesbury. She was there about a week, and afterwards returned quite recovered, and went on improving in every respect till the day he sold her.

Henry Lepper, of Aylesbury, veterinary surgeon, said that the mare came to his establishment. He considered it merely a case of ordinary colic, as she recovered under the usual treatment. He believed Mr. Armatage's statement to be perfectly correct, but still the organic

disease he had spoken of might have come on in as many weeks as months the plaintiff had had the mare. In cases of peritonitis as much matter as had been found in this instance would sometimes accumulate in a few days.

After recapitulating the evidence, his Honour found a verdict for the plaintiff for £27, and the costs of the suit.

ARMY APPOINTMENTS.

From the 'London Gazette,' of Tuesday, Aug. 23.

VETERINARY MEDICAL DEPARTMENT.

WAR OFFICE, PALL MALL.

GREATREX NADEN, gent., to be acting Veterinary Surgeon, *vice* Dulley, who has resigned.

OBITUARY.

DIED, on the 23d July, at Jersey, James Western, Esq., retired V. S., of the H. E. I. C. S., in the 59th year of his age.

Mr. Western graduated at the Royal Veterinary College, London, in 1827. He was among those who were early appointed as veterinary surgeons to the late Honorable East India Company's army. Of a spare habit of body, active and energetic in mind—in proof of which, were it necessary, we might refer to the pages of this journal—for many years the climate of India agreed with him, and he was enabled uninterruptedly to pursue his professional avocations, and to maintain the respectability of his position. At length he experienced an attack of fever, and returned home on sick-leave, hoping that England would do for him that which it has done for so many of her sons when similarly affected. The atmosphere of London—his native place—not suiting him, he went to the Channel Islands, and for a time appeared to be getting better. The malady, however, returned again and again. Death had too deeply plunged his fatal dart. The wound rankled long, but at length the contest ceased, and the once strong man yielded to the common lot of all.

We were personally indebted to Mr. Western for much information respecting the action of medicinal substances on the horse in India, and also for many specimens of drugs used by veterinary surgeons there.

“ Our lives are rivers, gliding free
To that unfathom'd boundless sea,
The silent grave!
Hither all earthly pomp and boast
Roll, to be swallowed up and lost
In one dark wave.”

THE
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Fourth Series.
No. 58.

Communications and Cases.

ON THE OPERATION OF TENOTOMY IN THE
HORSE.

By G. W. VARNELL,
Assistant-Professor, Royal Veterinary College.

IN former numbers of the *Veterinarian*, I have placed on record the views entertained by me on the operation of tenotomy in the horse. It is now my intention to lay before the profession the manner which I believe is the best for its performance, and to give some illustrative cases, showing its success or otherwise, with the conditional circumstances necessary to be taken into consideration.

The Operation of Tenotomy.

The success or non-success of this operation will depend very much upon the mode of performing it, as well as many other contingencies that may co-exist.

Firstly. Whether the operation is performed in a clumsy, bungling manner, using at the same time considerable violence; or, on the other hand, whether it is done in a neat surgical way.

Secondly. Whether the operation is performed by one or other of the two following modes, viz.:—Firstly, the subcutaneous plan, or secondly, the open wound.

The reparative process is also hastened or retarded in a great degree by the mode of operation, the after treatment, and the general health of the animal.

The same appliances have not the beneficial tendencies in
xxxii.

old as in young animals. In old horses, there is a certain amount of danger in casting them, and, in the next place, in consequence of the hard and rigid state of the structures operated upon, reparation as a rule is very tardy and imperfect. Also, various kinds and stages of disease, either of the limb or limbs operated upon, or of the system generally, will interfere with the reparative process, and so likewise will debility, or plethora, either being in excess; the former by not affording exudative matter of a proper quality out of which normal tissue can be formed, the latter, by there being so much blood in the part as will induce the suppurative action, and thus tend to frustrate our object. A scrofulous habit of body, or the system being imbued with the poison of glanders, or the limb or limbs locally affected with farcy, would as a matter of course forbid an operation of this kind being performed, for if performed it would most likely be followed by unhealthy action.

The operation of tenotomy, or ligotomy, is in reality a very safe and simple one, when performed by those who have any pretensions to a knowledge of surgery; and the after treatment also is as simple. The principal thing to be observed is, so to manage the parts operated upon as to produce a proper length of the tendon or ligament divided, when reparation is completed. Respecting this we shall state the results of our own practice hereafter.

Respecting the *kind* of operation, that is, whether the subcutaneous, or open wound, is preferable for the division of the tendon or ligament, I am decidedly in favour of the former, being thoroughly satisfied of the advantages it has over the open-wound mode. It is less dangerous, leaves less blemish, and is a much quicker process.

With regard to subcutaneous wounds generally, the justly celebrated John Hunter makes the following remarks. "The injury done to a sound part I shall divide into two, according to the effects. The first kind consists of those in which the injured parts do not communicate externally, as concussion of the whole body, or of particular parts, strains, bruises, and simple fractures, either of bones, or tendons, which form a large division. The second consists of those which have an external communication, comprehending wounds of all kinds, and compound fractures The injuries of the first division, in which the parts do not communicate externally, seldom inflame. While those of the second, both inflame and suppurate." (See vol. iii, pp. 240-1, of Hunter's Works.)

On this extract Professor Paget says, "In these sentences Mr. Hunter has embodied the principle, on which is founded

the whole practice of subcutaneous surgery, a principle of which, indeed, it seems hardly possible to exaggerate the importance." (See 'Lectures on Surgical Pathology,' vol. i, p. 170.)

As an illustration of the correctness of the above conclusions of Mr. J. Hunter, I will introduce two cases, one that was operated on by myself, in the year 1849; another that occurred in the practice of a veterinary surgeon in the year 1852. My own case is as follows:—On the 9th of June, 1849, a black cart-horse, the property of Messrs. Huthwaite and Co., brewers, Bromley, Essex, was sent to London, for our opinion respecting a deformity of the near hind limb, arising from disease, which resulted in a thickening and shortening of the suspensory ligament (the ligamentous band which joins the flexor pedis tendon). To remedy this deformity, it was recommended that the flexor tendon should be divided, and it was further proposed that I should go to Bromley, and there perform the operation. This proposition was agreed to by the owner of the horse, therefore on the above date, accompanied by my friend Mr. Gowing, V.S., I proceeded to the above-named place. The horse was brought out, and cast in the usual way; and, as I wished to operate on the inner side of the leg, the animal was turned on his left side. A web-halter was placed around the leg, above the hock, at which two men steadily pulled. Another rope was placed on the foot, for one man to pull at when directed to do so. I now had the foot flexed so as to cause the tendon to become flaccid, which enabled me to feel the space between the perforatus and perforans. I next passed a narrow-bladed knife *flatwise* between these two tendons, making the puncture for that purpose on the inside of the leg, and taking care not to penetrate the skin on the opposite side. I then turned the edge of the knife against the perforans tendon, it being the one I wished to divide, at the same time directing the man who had charge of the rope on the foot, to draw it steadily, and if anything in a direction a little forward. In severing the tendon, I had scarcely any sawing movement to make with the knife, in consequence of the other tendon by the traction made upon it, pressing upon its back, thus greatly facilitating the division of the tendon; which effect was indicated by a sudden jerk. The operation was thus completed, and scarcely a drop of blood was lost. The horse was allowed to rise, and led to the stable, and in his walk there it was observed that the foot of the limb operated upon was placed upon the ground, quite as well as the other. The horse having been placed in the

stable, I laid a little lint over the small puncture I had made in the skin, and over that a light calico bandage, which was continuous from the fetlock to the hock. This I ordered to be kept moist with some weak vinegar and water, and by no means to allow the horse to lie down. His diet to consist of green meat, bran mash, and a few oats.

I saw no more of the horse until the 16th, a week after the operation. He was then standing with his heel fairly on the ground, having on his foot a shoe of the ordinary kind. The leg was free from swelling, and the small puncture in the skin had quite healed, indeed, the place where it was made could only be found with difficulty. But in passing the hand down the limb, over the parts operated upon, I could detect a slight bulging, which was doubtlessly caused by the exuded lymph that occupied the space between the divided ends of the tendon. Before leaving, I gave orders that the horse should not be allowed to lie down for another week, and that the limb should be kept wet, especially over the part operated upon, with weak vinegar and water, as before. At the end of the week he might be allowed to lie down.

One month after the operation was performed, the horse was turned into a pasture field, where he remained another month, after which time he was put to work again. I now lost sight of him, but was informed that his leg was as free from deformity as the opposite one, and the heel came equally as well down upon the ground.

I heard no more of the horse until the end of about twelve months, when I was told that he was unable to get the heel down to the ground, but that the defect was not to the same extent as before the tendon was divided. The way in which this occurred, I shall endeavour to explain hereafter.

The other case that I have alluded to is as follows:—A letter was received by me respecting the after treatment of the following case.

(COPY OF THE LETTER.)

“*January 8, 1852.*

“I performed the operation of tenotomy on a large cart-horse, eight or nine years old. He was so bad, that every time he stepped his fetlock joint came to the ground. [I suppose the writer means, that the front of the fetlock joint came to the ground.] He had been wearing a shoe having a piece of iron, two inches long, projecting from the toe. I operated on the outside of the fore leg; after the tendon was divided the cut ends could not be less than two inches apart. *I poured some Tincture of Myrrh into the wound, and put on a bandage, and gave the*

horse a dose of physic, or rather what we call a laxative-diuretic ball, composed of Aloës, ʒss, and Nitrate of Potash, ʒss; and allowed the bandage to remain on for four days. I then took it off, and cleaned the leg, and found there was some matter forming on the inside of the limb, opposite the wound, the wound itself looking healthy. On the 14th, an abscess had formed and broken, and was discharging freely. External wound healthy, and healing fast. *I applied a plaister of digestive ointment inside and out for two days, then a dressing daily of equal parts of solution of Nitrate of Potash, Sulphate of Zinc, and Tincture of Myrrh, up to the 21st.* Then a dressing daily of a solution of Sulphate of Copper, and Bole to make it thick, and thus form a coating over the wound, so as to protect it from the air, and discontinued the bandage; the horse being at the time very little lame, and the leg nearly in a natural position. Will it do this horse's leg good to fire it? or to put on a blister or two, after another month or six months? or will it be strong enough of itself after three months' rest to stand work?

* * * * *

The above two cases beautifully illustrate the powers possessed by nature to repair lesions of any of the organs existing in the animal body, even under the most unfavorable circumstances; for I think it will be admitted, that in the case last described, it would be almost impossible for the ingenuity of man to adopt a course of treatment more likely to impede the reparatory process than that resorted to. And yet, in spite of such strange proceedings, the wound healed in a very reasonable time. The veterinary surgeon who had the care of this case may consider himself fortunate that diseased action did not extend to more important parts, such for instance, as the theca, at the back of the knee, or fetlock joint; for had such been the case, the result in all probability would have been far different.

In my own case, the operation was performed with as little violence as possible; the interior of the wound was not exposed to the influence of the air, and there was no hæmorrhage by which a clot of blood could have been formed, and which might have interfered with reparation. Indeed, so far as the wound itself was concerned, nothing could possibly succeed better than it did.

Wounds, whether artificially or accidentally produced, should not be dressed with nostrums of any kind, for such applications, as a rule, impede the reparative process, and the blemish is almost sure to be extensive. Our duty is to watch the condition and progress of the wounded part, and particularly to attend to the health of the animal. My idea of treating the above kinds of wounds, is first, to place the parts as much as possible in a state of rest; secondly, to exclude the atmosphere from the wound, and thirdly, to use, if

required, some evaporating lotion to the surrounding parts, with the view of preventing an undue quantity of blood accumulating at the seat of injury; for sometimes, when such is the case, a larger amount of exudation takes place than is required to heal the breach, and, perhaps, it is unsuitable for the formation of structure, or it may be of a quality, arising from other circumstances, favorable to the suppurative action. Our object should always be to assist nature, and not to frustrate any one of her great laws.

I shall now quote some cases from an undoubted high authority on surgical pathology, which I hope will bear out the assertions I have made in favour of subcutaneous operations.

At p. 171, vol. i, of Paget's 'Lectures on Surgical Pathology,' he says, "I had frequent occasion to observe these differences in a series of experiments made for the illustration of the healing of divided muscles and tendons. Some of these were divided through open wounds, and some by subcutaneous sections, and the recital of a single experiment may afford a fair example of the difference of results that often ensued. In the same rabbit, the 'tibialis anticus,' and the 'extensor longus-digitorum,' were divided on the left side with exsection through the skin, on the left, with a subcutaneous section through a small opening. Twelve days afterwards the rabbit was killed. The wound on the left side was well repaired, and with comparatively little trace of inflammation. The gap on the right side was closed in with a scab, and an imperfect scar; but under this was a large collection of pus, and no trace of reparative process."

The above experiment corresponds in its results with what I have observed in the division of tendons in the horse, and clearly shows the superiority of the subcutaneous operation over the open wound, which is necessarily more or less exposed to the influence of the atmosphere. It also agrees, as far as the results are concerned, with the two cases I have before mentioned, namely, the one which I operated upon at Bromley, Essex, and the other by the veterinary surgeon in the year 1852.

So superior do I consider the subcutaneous mode of operating, by small puncture, over the open wound, that I shall quote some other experiments from the same talented author I have already alluded to, Professor Paget. At p. 265, vol. i, he writes: "In the case of divided Achilles'-tendon, the disadvantages of open wounds, *i. e.*, of wounds extending through the integuments, over and each side of the tendon, as well as through it, were as follows:—1st. There was

always more inflammation in the neighbourhood of the wound, and more copious infiltration of the parts than in a subcutaneous division of the tendons in the same rabbit. 2d. Suppuration frequently occurred, either between the retracted ends of the divided tendon, or beneath its distal end. 3d. The skin was more apt to become adherent to the tendon, so as to hinder its sliding movements, when the healing was completed. 4th. The retracted ends of the tendon were more often displaced, so that their axes did not exactly correspond with each other, or with that of the reparative bond of union. Such mishaps were often observed in open wounds, but were rare after the subcutaneous operations."

(*To be continued.*)

PROPOSED TABLET TO THE MEMORY OF THE LATE CHARLES HENDERSON, M.R.C.V.S., IN THE CHURCH OF SAHARUNPORE.

SAHARUNPORE ; *July 23d, 1859.*

DEAR SIRS,—I beg to send for insertion in the *Veterinarian*, a copy of a letter from R. Spankie, Esq., judge of Saharunpore, to the friends, in India, of the late Charles Henderson, Esq., veterinary surgeon, Saharunpore Stud.

The subscription raised for the tablet has reached a sum which was hardly anticipated, and as I am sure this mark of our love for a member of the profession will be gratifying to your readers, and to his relations and friends, I do not hesitate to forward the inclosed.

Yours faithfully,

W. C. MAC DOUGALL, Lieut.,
Officiating 1st Class Assistant, Stud
Department.

To the Editors of 'The Veterinarian.'

To the Friends of the late CHARLES HENDERSON.

DEAR GENTLEMEN,—It has been suggested that a tablet should be erected to the memory of our deceased friend in the church of this station. The walls of our church are at

present without any inscriptions in remembrance of friends passed away. I do not think that we could find a more worthy subject for the first tablet, than presents itself in the recollection of Henderson's daily life amongst us, full of hope, piety, and kindness.

Any elaborate or expensive design would be unsuited to the simple and unpretending character of the man. A plain, but handsome tablet, with an appropriate inscription, seems all that is required.

As it is not unlikely that many friends of one known only to be loved will be found anxious to join in this mark of affectionate regret and esteem, it is proposed to limit the subscription, for the present at least, to ten rupees.

Yours, sincerely,
(Signed) ROBERT SPANKIE, C.S.
Judge of Saharunpore.

SAHARUNPORE; *January 6th*, 1859.

[Copy of Inscription on the Tablet.]

SACRED
TO THE MEMORY
OF
CHARLES HENDERSON, ESQUIRE,
BENGAL ARMY,
VETERINARY SURGEON ATTACHED TO THE STUD OF THIS PLACE;
WHO
DIED AT SEA, ON HIS PASSAGE TO ENGLAND,
ON THE 5TH DECEMBER,
MDCCCLVIII.
AGE 28 YEARS.

This Tablet was erected by his Friends who loved him in life and follow him in Death with affectionate Remembrance.

ON THE TITLE OF VETERINARY SURGEON.

By "PROVINCIAL."

THE force and justness of the very excellent letter, signed "*Fiat Justitia*," which appeared in the June number of your Journal, must be admitted by every well thinking member of our profession. It seems also to have so rivetted your attention as to be thought worthy of consideration in your *leader* of the same month. Your able correspondent con-

cludes his communication by calling the serious attention of the Members of the Council of the Royal College of Veterinary Surgeons to the subject; and you, in language less persuasive but more forcible than usual, somewhat censure that body, and charge them with party-feeling for the purpose of carrying out certain views. I, as one having the honour of a seat at that board, and being tolerably constant in attendance at its meetings, must remark that I have never witnessed such a course of procedure. The members thereof may and do differ at times in opinion, as to the best mode of serving their constituents, but I had hoped that individually and collectively they have only had one object in view, namely, the welfare and onward progress of the profession.

None are more convinced than yourselves that ours is an apathetic profession; one always grumbling, never united, and the majority never troubling themselves at all about professional progress. Many, after leaving their "alma mater," never enter again within her walls, and even some, who have been elected to the honours of the council, have never made their appearance at any of its meetings. Can such parties expect the council to do everything? There are those to be found who are always at their post, never tiring, setting even distance at defiance, and sacrificing their valuable time to the performance of their duties. A brilliant example of this we have in our present very excellent president, who, I trust, will be as well supported during his official year as his devotion to our cause entitles him to be.

What can be a greater source of annoyance than that of a young man choosing our profession, spending his time, his talents, and his money, in obtaining a competent knowledge of its principles, in the fond hope, when found proficient, of settling himself in some favoured locality selected by his friends, to find himself forestalled by an individual arrogating to himself the title of "Veterinary Surgeon?" One who has never even entered a veterinary school, and whose sole pretensions to any acquaintance with the profession arises from his having, perhaps, been groom to some man of distinction; or he may have ridden for a couple of seasons the second horse to a master of fox-hounds. There are few localities where such easy made veterinarians do not exist. A case in proof occurs to me while I am writing, of one whom I knew in his early manhood as a gamekeeper; next he became a castrator; and now he mounts a brass plate, of no modest dimensions, with "Veterinary Surgeon" on it, in the leading street of an important agricultural town.

One of our worthy ex-presidents, Mr. Jas. Turner, has very

strongly urged on the council the necessity of occasionally publishing the names of all duly qualified members of the profession in one or more of our leading metropolitan journals, but I much fear that such a mode would be found more expensive than remedial. Rather, I would suggest, that as our 'Register' is now published in a cheap form, that, under the superintendence of a committee, a copy of it be sent to each commanding officer of all the regiments of cavalry, to all masters of fox-hounds, and to the secretaries of our leading agricultural societies; and further, if all the registered members would provide themselves with a few copies, and place them in conspicuous places in their establishments, I think that this might work some good.

Much of late years has been advanced respecting the necessity of an extended education of the veterinary pupil, so as to enable him to meet the requirements of the agricultural community. This also, very wisely, forms one of the prominent features of their leading society—the Royal Agricultural Society of England. Now, through the increase and excellency of the staff of our London school, much has been accomplished towards this; but, I would ask, does the pupil, when thus prepared and qualified, meet with that encouragement he has a just right to expect? Does he get "value received" for his outlay? I fear not. Are there not those, from whom we ought to expect better things, who still employ such persons as I have described, and that with a full knowledge of their antecedents, and lack of education? Are there not even some who have listened with delight to the annual orations of one of yourselves, Messrs. Editors, and who, instead of showing their interest in the profession by patronising those whose education you have partly superintended, adopt such a system of dictation to those they employ as the educated man would not, could not, submit to? It may be said that talent will be sure ultimately to succeed. But both you and I have lived long enough in the world to have occasionally seen ignorance and impudence distance unobtrusive talent in the race, and cause it to retire in disgust from the contest.

You tell us that our army brethren are likely soon to have their constitution improved. I trust such may be followed by an equal thoughtfulness for the civil portion of the profession. At all events it is high time that we respectfully but firmly demand to be acknowledged and recognised as a professional body. For this we have prayed in vain long enough.

SOUNDNESS AND UNSOUNDNESS OF HORSES.

By G. BODINGTON, M.R.C.V.S., Cardiff.

ALTHOUGH much has been written upon this subject, it, unfortunately for the profession, still remains an unsettled question, as to what is soundness and what is unsoundness? or why is it that such conflicting opinions are given by the members of the veterinary profession as to soundness or otherwise in their examinations of horses?

Perhaps a candid inquiry into the *cause* of the latter will in some measure answer the former question; at all events, so far as its *legal* definition is concerned. As in medicine it is, I believe, of the first importance to ascertain and remove the *cause*, and afterwards to apply the remedy, so, perhaps, here this theory is admissible.

I am inclined to think that much of the difficulty now enveloping this question, has in a great degree been increased and extended by veterinary surgeons themselves, and not so much by any serious or palpable neglect in the law of warranty. Further, that this state of things has been the result, and is attributable to examinations being made, and opinions given too prematurely, that is, without due consideration; to which may be added, too great an anxiety manifested for the interest of their employers. A prejudiced mind is one of the stumbling-blocks ever in the way of the professional man, and unless it is met by timely antagonistic determination, it becomes the high road to fatal error.

Who has not seen the mistakes in judgment that many have fallen into, and which afterwards have been freely confessed, by the habit, apparently trifling, but nevertheless serious and much to be deprecated act of "nodding the head," when the animal is running and under examination? I hesitate not to say that this simple act has prejudiced many a mind. Then, is not the very wish, if too eagerly pursued, to do the best for our employer in these cases, *too* apt to prejudice the mind? and thereby to render the *hand* and the *eye* a little too ready to indulge in this same prejudice? And, again, it does unfortunately sometimes happen, however we could desire it were otherwise, but we must not disguise the fact, that with other causes *jealousy* will lend the helping hand to prejudice.

If some such deplorable causes as these, with many others of the like kind, easily adduced, did not too frequently

exist, we should not be so often pained by hearing and reading those daily reports of the large amount of hard swearing in our courts of justice which characterise horse causes. And I cannot help thinking that if veterinary surgeons would take the law as now defined for the foundation whereupon to raise their structure, instead of many of their own fancies as to what is law, it would then be a simple question for them to answer, as to whether or not any of the numerous diseases named did exist at the time of their examinations or not. Indeed, this I presume to be the strict duty of the veterinary surgeon; and for a catalogue of these I with pleasure refer him to that concise and excellent work, 'Olliphont on the Soundness and Unsoundness of Horses.'

Let the veterinary surgeon when consulted, go to this with an unbiassed mind and a firm resolve to look at the case calmly and dispassionately, and with a determination under no circumstances whatever to swerve from that course which his professional knowledge, honestly and without favour, so loudly calls upon him to pursue; never caring by whom employed, or by whom opposed, or whether or not the opinion he may give "*suits*" his employer or meets his anxious desires. Let him follow this course in all cases, and he will, I think, find his duty respecting an examination as to soundness free from all difficulties, and plainly defined.

I cannot conceive veterinary pathology and anatomy to be really in such a state of darkness as not to render easy to all her advocates the detection of any disease acknowledged by the law as constituting unsoundness; but I *can* conceive, and have often witnessed, what flagrant errors, stretches of the imagination, and a want of strict adherence to common sense and scientific knowledge, urged on by prejudice, *will* and invariably *do* lead to; together with the latitude given to persons who are inclined to accept the opportunity of setting forth their peculiar notions as to the *probability* of an animal *some time or other* taking on a certain disease whereby he *may* become unsound. This has ever surrounded the question with thick clouds of mystery, and is called "predisposition," a word which unhappily by its misapplication, "*even as good remedies,*" has become a poison, and like *the explain all* "inflammation," has become a mere peg whereupon to hang the cap of ignorance. Again, you will hear of professional men not only disagreeing about the existence or otherwise of disease, but also as to what diseases by their appearance render an animal unsound. But, in this particular, the veterinary surgeon is not the only one who creates a difficulty. Are not the most eminent judges of our land at variance? and

do they not make a way of escape by each propounding and establishing his peculiar views? Surely this should not be. Again, who has not witnessed the different opinions given as to soundness even when two veterinary surgeons *agree* that some certain disease does exist, and which is acknowledged by the *law* to be unsoundness? The one feels it his duty (as no doubt it is) *legally* to reject such an animal; the other just as strenuously opposes it because he says the horse does not show any lameness.

Now the law does not sanction such ambiguity as this; I therefore cannot think that the law must be entirely blamed for the present unhappy state of things.

That the law of warranty does require *some* alteration, there is no doubt, and at a future period I will respectfully submit in *what* particulars, and offer a few suggestions as a remedy.

A FATAL DISEASE AFFECTING PRINCIPALLY THE LIVER OF SHEEP.

By G. WENTWORTH, M.R.C.V.S., Great Grimsby.

A SOMEWHAT singular and very fatal disease recently broke out in a flock of sheep in this neighbourhood, a short description of which I have thought may not be without interest to some of the readers of the *Veterinarian*.

The sheep were the property of Mr. Edward Smith, of Riby Grove, seven miles from Grimsby. Mr. Smith had, in addition to his other sheep, about two hundred wethers, which during the early part of last winter were kept on turnips.

The beginning of February they were removed to Swede turnips, and allowed half a pound of linseed cake each per day.

The latter part of March, or the beginning of April, they were turned into a field of red clover, or what is called in this neighbourhood "cow grass." There was a little rye grass amongst it. It was intended to have been mown, but from some cause or other, Mr. Smith changed his mind, and grazed it. The sheep were now allowed one pound of cake each per day.

For some time after they were placed on the red clover they went on remarkably well; and before the month of June one hundred of them were sold, fat, and the remainder

continued in the same field, and gained flesh rapidly until about the first week in July, when the owner fancied that they did not look so bright and lively in their wool, and did not improve so rapidly as they had previously done; but as the dry weather had set in, and the pastures were not quite so luxuriant as they had previously been, no further notice was taken of them until the latter part of July, when the first losses took place, and seldom a day passed afterwards without several sheep dying of what the shepherd called "the yellows."

On the 29th of July I had some conversation with Mr. Smith on the subject of his losses, when he asked me my opinion as to the cause and treatment of the malady; but added, they were that day giving the whole of the sheep two teaspoonfuls of turpentine and half a pint of solution of common salt and water, made strong enough to float an egg (which I find requires about an ounce and a half of salt).

I suggested that they should be entirely removed from the clover and put on grass-land, and instead of giving them oil-cake, they might have a few oats, and a little common salt mixed with the corn. In the way of medicine I stated I would prescribe something more likely to be of service than the mixture they were then giving them; but as they had only just given the turpentine and salt, I proposed it should have a trial, and if it did not succeed, I would see them. This I did on August the 1st, as he continued to lose a great many daily.

I had an opportunity of seeing some that were affected, and the following were the most prominent symptoms:—A peculiar languid, listless appearance, frequently shaking the head as if flies were teasing them, ears drooping, sometimes boring the head against any little elevated ground, seldom separating from the rest of the flock more than two hours previous to their death, but moving lazily along with their heads down, and frequently grazing or rubbing the nose along the ground. As they got worse, they would generally move to the pond, ditch, or some shaded place, where they could easily be caught. The conjunctival membrane, and the mucous membrane of the nose were both of a yellow tinge, the inside of the thighs and arms of a dark brown colour, the ears of some were swollen, and when gently pinched between the thumb and finger, the skin easily sloughed off. As the disease advanced, they would grate their teeth, and stand with the head hung down to the fore feet, then fall down and die without a struggle; which took place in nearly every instance within two or three hours after they had been observed to be

ailing. In some instances they grazed within half an hour of their death.

As there were several lying dead in the slaughter-house, these I examined, and the following are the principal appearances. The sheep were in excellent condition, weighing on an average from twenty-two to twenty-four pounds per quarter. On removing the skin, I was immediately struck with the very yellow, jaundiced appearance of the carcase, the colour being equally diffused all over the body.

The stomachs and intestines were tolerably healthy, and their contents about the natural consistence. The liver of one was healthy, in all the others I examined it had a peculiar mottled appearance, and its structure was easily broken down. The gall-bladder, in every case, was full of dark, tarry-looking bile. The kidneys were inflamed, particularly so in that case in which the liver was healthy. The bladder contained a quantity of dark-coloured fluid, in appearance resembling porter. On opening the chest, from two quarts to a gallon of dark-coloured serum escaped. The lungs were healthy. The heart pale and flabby, with a small quantity of fluid blood in the right ventricle. The carcasses quickly decomposed.

Treatment.—In addition to a change of situation and food, I suggested that they should all have an aperient given to them. Accordingly, to each was administered an ounce and a half of sulphate of magnesia, with half a drachm of ginger. This, I believe, had not the least beneficial effect, as they continued to die as rapidly, if not more so, than before. Consequently Mr. Smith had the remainder, with the exception of eight, slaughtered and sent away; several of them, however, when dressed, were so yellow that they were unfit for food.

I had an opportunity of trying a few experiments on some that were affected. I found purgatives to be quite useless, but was enabled to prolong life, from one to three days, by giving stimulants; still, to be of any service, they had to be given early and frequently repeated. The spirit of nitric ether, exhibited in half ounce doses, or oil of turpentine, in two drachm doses, or carbonate of ammonia, in scruple doses, administered every two or three hours, in the first instance, and at longer intervals afterwards, was found of benefit. The only case that recovered had two drachms of turpentine, with ten drops of creasote, given to it, in a small quantity of linseed oil, which was frequently repeated. Out of one hundred sheep, more than thirty died within ten days.

Before this occurrence I was not aware of the fact that red clover is very injurious to sheep if they are kept on it for a long time; but that the food was the cause of this disease I have little doubt, for of the eight sheep that were not sold, two of them quickly took the disease, while the remaining six, being kept on grass-land, continue healthy.

A few days since I had some conversation on the subject with Mr. F. Sowerby, of Aylesby, a very extensive and observant farmer, when he told me that twenty-five years ago he put some sheep on red clover, and in one week, in the month of July, he lost thirty-five of what was called the "yellows," and was recommended to sell the remainder.

This communication has already far exceeded my intended limits, but the fearful losses farmers occasionally sustain among their sheep, and the importance of a means of prevention, must be my apology.

INFLUENZA IN HORSES.

By J. BOLTON HALL, M.R.C.V.S. and V.S.R.A., Simla.

OCCASIONALLY I get the *Veterinarian* out here, but strange to say, I seldom see in it any communications from my professional brethren in this country. Certainly there is rarely anything very remarkable occurring, the diseases being those incident to a campaign; but from the number of horses under the care of veterinary surgeons, something might be culled interesting to your numerous readers.

In this communication, I am about to give merely a rough sketch of an epizootic disease that broke out some months since, and one respecting which, considering its universality, there is, perhaps, more difference of opinion as to the most successful mode of treatment, than almost any other: I allude to influenza. It is rather an ambiguous term, but possibly it was originally given to the disease, not only from the effect it has on the animal itself, but on all others associated with him; for it is most certainly and incontrovertibly the case that if one horse be attacked, you may expect the malady to affect the whole troop. Yet some persons will contend that it is neither contagious nor infectious, and they may to some extent be right, since, unquestionably, you have the same exciting cause in operation which not only brings on the disease in one horse but will do so in a thousand. However, it happened in almost every

case in this instance, that the horse being taken away suffering from influenza at night, either one or other of the horses contiguous was found suffering from it the next day or the day following.

It is the practice with some professional men, I believe, to bleed, purge, and otherwise deplete the system in influenza. On the other hand, a much more numerous class recommend the employment of diffusible stimulants, followed by vegetable tonics. It is, of course, impossible to lay down any specific mode of treatment. You must be governed by symptoms and other circumstances.

We left Benares and marched for Oude in the month of September, 1858, with all young horses from the Cape, and broken in by us five or six weeks previous to the march. The rain had not ceased, and it came on very heavily, two or three marches from Azimghurh, pouring incessantly; the country for miles round being covered with water, giving to it the appearance of a vast lake. However, nothing unfavorable occurred excepting a few attacks of colic, which were common during the whole of the rains, arising from the rank and indifferent grass obtained at that time. I may here mention, that an irregular cavalry regiment with us at the time, lost as many as three horses in a day from spasmodic colic running on to enteritis; yet, the government will allow this sooner than give a veterinary surgeon, who may be present at the time, two annas (3*d*.) a horse per month to attend them. I have known instances of the commanding officer paying the veterinary surgeon out of his own pocket; but this is the exception rather than the rule.

The treatment adopted by the Indian horse-doctors, even after inflammation has set in, for they make no distinction, and it follows very quickly in this country on colic, is to give a pound of ghee (a kind of stinking butter), with pepper, or something equally hot.

But to revert to the original subject. We marched about after the rebels until November, when the weather became fine and settled; thermometer about 80° in the middle of the day, and as low as 36° at night. During this, and part of the following month, we halted at Ackberpore. Now, strange as it may appear, during the whole of the bad weather, when you would suppose from the muggy state of the atmosphere, resulting from the almost constant rain, it was most conducive to disease, the horses were perfectly free from any affection of the air-passages; but soon after our arrival at the above-named place, our horses being picketed on a fine large and apparently healthy plain, influenza made its appearance.

I mention these circumstances to show how often disease of an epizootic character shows itself when you can really assign little or no cause for it. The horses were all well clothed during the night, with a good English rug on each. The first horse attacked was ridden by one of the trumpeters. He was six years old, and was immediately moved from the rest and medically treated. The first five or six cases were more severe than any of the following ones; and as the disease progressed, it appeared in a much milder form; but no precautions that were taken appeared to check its steady progression, until the removal of the camp, which I suggested to the officer commanding the force as the only chance of getting rid of it. But by this time I should say nearly one hundred horses had suffered. We lost only one. In this case, although repeatedly blistered over the throat, we could never get the abscess to suppurate. It pointed in several places under the jaw, in small lumps, about the size of a filbert. I have often heard Mr. Dickens, V. S., of Kimbolton, remark how frequent the formation of internal abscesses in such cases are; and such was the termination of this, for the horse fell down dead on the march about a month after he was first attacked. On a post-mortem examination, I found the whole of the small intestines bound up together, as it were, and forming one immense abscess, which contained about a gallon of pus. There was also a slight trace of disease in the liver, but this was evidently caused by its proximity to the large abscess.

The symptoms in almost every case were loss of appetite; profuse discharge from both nostrils; extreme soreness of the throat, with difficulty in swallowing; the urine thick, and high coloured; great prostration of strength; pulse small, weak, and irritable; bowels generally constipated. Surely, no one would bleed with these symptoms. The first treatment adopted was to blister the throat, and give a laxative ball when practicable, for the soreness of the throat often rendered it impossible to give either a ball or a draught by the mouth. In one case the ball was coughed up into the nasal passages, although it was given most carefully by the farrier; and being present at the time, I saw that the accident, under the circumstances, was an unavoidable one. It proved a very troublesome job to get the ball back again. The mode of procedure was to soften it first by injections of warm water before attempting to use the probe, which answered very satisfactorily, and the horse went on well afterwards. After this I did not attempt again to give any medicines by the mouth, but turned my attention more

particularly to equalising the temperature of the body and extremities. Luckily, we had several condemned blankets with us at the time. These I tore up, and well bandaged the legs, which proved very advantageous. Of course, on service you could not be expected to carry about bandages sufficient for fifty horses, a number at one time we had sick. Mr. Spooner, in his work on 'Influenza,' recommends, I believe, small doses of nitric ether, two to four drachms to be given for a dose. Surely this must be too small a quantity for a horse. Nitric ether is undoubtedly a good agent when you have the coadjutants of warm clothing and a stable, but I doubt if it would do much good when given to a horse on an open plain, or in the hovels you often meet with in England. The preferable mode of treatment unquestionably consists in the exhibition of laxatives and diffusible stimulants, but unless you have proper stables and clothing, I say again all is useless, and merely a waste of medicine. Now, under the disadvantageous circumstances you often find yourself in, blistering is the sheet anchor; and this not once but again and again. As soon as the action of one has subsided, and the throat still remains sore, apply your agent again, then give a laxative, either in the form of a ball or draught. Under the circumstances detailed, I do not believe that all the sudorifics, diffusible stimulants, sedatives, &c., in the pharmacopœia could have hastened convalescence one day.

AN EXTRAORDINARY LARGE CALCULUS FOUND IN THE CÆCUM OF A HORSE.

By J. AUSTEN, M.R.C.V.S., Exeter.

FEB. 6th, 1859.—I was this morning requested to attend a horse, the property of Mr. Upright, miller, Exeter. The animal exhibited great uneasiness, frequently looking around him in a wild and undescribable manner, and towards his flanks, and occasionally colicky pains were experienced. Being informed that the horse had not dunged during the night, I gave—

℞ Ol. Lini, ℥x;
Aloës, ℥ij;
Magnes. Sulph., ℥iij;
Sp. Ether Nit., ℥iiss, in haustus.

Ordered injections of warm water to be thrown up every

three hours, the legs to be well rubbed and bandaged, the body to be moderately clothed.

7th.—This morning I found the horse's bowels freely opened, and everything appeared to be progressing favorably. After administering some cordial medicine, I left orders with the groom to allow the animal soft mashes, with a little boiled linseed as diet, and give moderate exercise.

8th.—The horse, this morning, appeared quite well. I gave a little more cordial medicine, and informed the owner that his horse would not require any more attendance, and that I considered him fit for work again.

July 11th.—I was this morning summoned to attend my late patient. Mr. Upright having sent him to my infirmary, he was turned into a large loose box. He was exhibiting symptoms of inflammation of the bowels, accompanied with severe abdominal pains, which symptoms continued unabated until death terminated his sufferings, on Wednesday morning, July 13th.

At 3 o'clock in the afternoon I made a post-mortem examination, and found an enormous calculus in the cæcum. It was of the extraordinary weight of $26\frac{1}{4}$ lbs. Its circumference, lengthways, is 32 inches, the lesser circumference 28 inches. The composition of it appears to be the triple phosphates mixed with oat-hairs.

[We thank Mr. Austen for his promise that he will endeavour to obtain this calculus for us. We believe it to be the largest on record. Two of the larger ones in the museum of the College weigh respectively $19\frac{1}{2}$ lbs. avoirdupois and $15\frac{1}{2}$ lbs. They are constituted wholly of the ammonio-magnesian phosphate.]

APOPLEXY IN A PREGNANT HEIFER.

By R. PRENTICE, V.S., Longford.

JULY 14th, 1859.—My attendance was requested to a short-horned heifer in calf, three years old, which was taken suddenly ill. She was the property of the Hon. L. H. King Harman, of this county. On my arrival I found her suffering from an affection of the brain, manifested by her wild and frightened appearance; moving her head and resting it back upon her shoulders; rolling of the eyes, pupils dilated,

blood-vessels congested; pulse 60, and strong; breathing stertorous; tympany of the rumen; when made to stand she stood with legs wide apart, staggered a few paces and fell; body and extremities deathly cold.

Although entertaining no hopes of her recovery I gave a strong cathartic drench, abstracted blood, and stimulated the region of the spine. I saw her again on the 16th, when I found her completely paralysed. All motion and sensation were entirely gone. I therefore had her destroyed.

On examination I found all the viscera healthy, with the exception of the liver, which was softened, and light in colour. On examining the brain, I found an effusion of serum had taken place, in quantity about an ounce and a half. The pia mater was greatly congested, some parts being perfectly black. The vessels of the spinal marrow were also congested, particularly along the cervical vertebræ.

The weather being extremely hot at the time, I considered that it might have been something like "sun-stroke" in the human subject.

[We are indebted for the above case to the Hon. L. H. King Harman, Newcastle, Ballymahon, Ireland; it having been drawn up by his desire for publication in the *Veterinarian*.

We consider it a very interesting one of active cerebral congestion occurring in association with pregnancy. It is a well established fact, that cows *after* parturition are exceedingly susceptible of apoplectic attacks, which, as may be expected, in by far the greater number of instances produce death in the course of a few hours. These attacks are most rife in the summer months, especially when a high temperature prevails, and we have occasionally seen them come on even before the foetus has been expelled from the uterus; facts which show the liability of the ox tribe, under such circumstances, to these affections of the brain. What pregnancy may have had to do in the production of the attack, in the present instance, is difficult to determine, but we incline to the opinion that it was not totally inoperative.

The feeding, kind of food, and general management of the animal are, however, not less potent for mischief, more especially when they are associated with exposure to a high temperature, and on these probably this attack depended.

The pathology of the case is very clear, and the symptoms were unmistakeable from the commencement.]

Facts and Observations.

DISEASE AMONGST THE CATTLE IN RUSSIA.

THE correspondent of the *Times* states, that letters received from various parts of Russia announce that disease has broken out among the horned cattle in that country, and that it has committed great destruction; 302 oxen out of 398 died in the district of Darna within fifteen days. The malady prevails more particularly in the Governments of Wilna and of Viatka.

ERGOTISED GRASSES.

MR. W. WATSON, M.R.C.V.S., informs us that, having been requested by a farmer in the neighbourhood of Rugby, to examine the herbage in some of his fields, he found that nearly every kind of grass therein was more or less ergotised. The agriculturist told him that he had for many years occupied the land, and whenever his cows were kept in these particular fields they nearly all cast their calves. He had sustained great losses in consequence, and this more in some seasons than others.

Mr. Watson thinks it probable that this state of the grasses may have had some influence in producing abortion.

He has forwarded to us specimens of the grasses, for which we feel obliged to him; but we shall attempt no description of them, being assured that the subject will not be lost sight of by him. We need hardly add, that it is one possessing much interest, both to the profession and the public.

HYDROPHOBIA.

THE Academy of Medicine of Turin is at present investigating measures best suited to prevent the occurrence of this terrible disease. In France it was thought some years ago that the end would be gained by raising the taxes on dogs, and so diminishing their number. M. Lobligeois gives on this head some very interesting details. He states that,

since the tax on dogs was established, the number of cases of hydrophobia have considerably increased at the Veterinary School of Lyons. He attributes the fact to the chaining up of the animals, and to the state of forced continence in which they are kept. "The fact," he writes, "of the immunity of dogs in Constantinople has been contested. M. Bernis, Head Veterinary Surgeon of the army in Africa, asserts that hydrophobia is not very rare in our colony in Algeria. M. Magne, Professor at Alfort, knew a well authenticated case. These two distinguished veterinary surgeons do not, however, furnish any document which invalidates the general assertion of M. Hamont. M. Hamont, who has directed for fourteen years the Veterinary School at Cairo, admits the existence of cases of hydrophobia in Egypt, but asserts that they are never observed except in European dogs, who have afterwards inoculated indigenous animals. In support of this assertion, M. Lobligeois cites a fact signalled in a letter addressed by M. Sacc, Professor at Wessering, to the Society for the Protection of Animals. Hydrophobia is not known on the Mussulman bank of the Danube, where the dogs wander freely about; but it is not very uncommon on the Hungarian side in dogs of the same race, who are chained up in farms, &c." In consequence of these considerations, and of this asserted fact, that hydrophobia is excessively rare in female dogs, M. Lobligeois advises that owners of dogs should keep only bitches, or castrated males, or dogs of both sexes; and that if they choose to keep males, they "ought not to impose upon them continence, but leave them to indulge in their traditional *cynisme*, and not chain them up."

REMEDY FOR THE BITE OF A MAD DOG.

A SAXON forester, named Gastell, now of the venerable age of eighty-two, unwilling to take to the grave with him a secret of so much importance, has made public in the *Leipsic Journal* the means which he has used for fifty years, and wherewith he affirms he has rescued many human beings and cattle from the fearful death of hydrophobia. Take immediately warm vinegar or tepid water, wash the wound clean therewith, and then dry it; then pour upon the wound a few drops of hydrochloric acid, because mineral acids destroy the poison of the saliva, by which means the latter is neutralised.

[It is well known that fortunately every bite of a rabid animal does not necessarily communicate the disease ; yet it is always desirable that measures should be *immediately* resorted to, so as to prevent so fearful a malady supervening.

We have seen worse expedients than the above advocated. By most persons it is conceded that extirpation of the wounded part, and a free use of caustic agents afterwards, are the most effective means as preventives.

The compounds of chlorine may very possibly possess some advantages over others of this last-named class of agents, inasmuch as it has been ascertained, by experiment, that if the virus of glanders be subjected to the influence of chlorine it becomes perfectly innocuous.

It is true that we know not the peculiar constituents existing in the saliva of a rabid dog which renders it poisonous, although some have thought it to be an excess of *Sulpho-cyanogen* in combination with a base. Now, should this base be potassium, which is most probable, chlorine will decompose the sulpho-cyanide thereof, throwing down a yellow powder, which is insoluble in water, alcohol, and ether, and being insoluble it will be comparatively inert. The composition of this, according to Parnell, is C_{12} , H_3 , N_6 , S_{12} , O , or it may be regarded as a compound of sulpho-cyanogen, hydrosulpho-cyanic acid, and water.

The late Mr. Youatt almost relied on the use of the nitrate of silver as a preventive.]

REMOVAL OF ASCARIDES.

M. BOURGEOIS D' ETAMPS asserts that the introduction of a small quantity of mercurial ointment into the rectum is an effectual means of destroying these parasites. It has never failed to do so in almost all the cases he has tried it. The quantity necessary is not large, and it may call for repetition.

Lately, for the removal of these tormenters, Dr. Compérat has recommended an injection of water containing from five to twenty drops of ether, which, according to him, has a double advantage. First, it destroys the larvæ; and secondly, by its antispasmodic properties, allays the irritation produced by these parasites.

Oleaginous injections, consisting of olive oil and turpentine, have long been successfully employed.

SUCCESSFUL TREATMENT OF TRAUMATIC TETANUS BY THE WOORARA POISON.

WE have already noticed the effects produced by the above agent, in the experiments performed by the late Professor Sewell with it in cases of tetanus in the lower animals. (See p. 139, vol. xxxi.)

M. Vella, of Turin, arguing from the fact of woorara being a direct sedative of the motor nerves, has undertaken a series of experiments which clearly show the antagonism between it and strychnia.

In two patients, suffering from tetanus arising from gunshot wounds, he tried the woorara. By it the muscular system generally was relaxed, and the patients for a time experienced relief; but ultimately they died. In a third case he was more successful, as the patient got well thirty-six days after the first application of the poison.

M. Vella's manner of using it consists in dissolving it in water, in the proportion of two grains of woorara to nine drachms of water, increasing the quantity gradually to seven or eight grains. Compresses are moistened with this solution, and kept constantly applied to the wound, renewing them every third hour at first, but less frequently as the disease yields.

NEW NEEDLE FOR THE WIRE SUTURE.

MR. G. MURRAY has invented a new form of needle for passing the wire suture, which is very simple in its construction. It is of the ordinary shape, but the wire, "instead of being passed through an eye at right angles to the long axis of the needle and doubled back, passes along a *conical* canal, the larger end of which is at the side of the instrument, the smaller end opening at the heel of the needle. By the simple expedient of turning the *smallest* possible piece of wire upon itself, the wire is prevented from escaping."

COMPRESSED FOOD FOR HORSES.

M. NANDEN, Veterinary Surgeon to the Imperial Guard, has compressed food for horses into small tablets. The plan adopted by him is as follows:—The hay and straw are chopped fine, the oats crushed, and these being mixed in the necessary proportions, upon the mixture is poured a mucilage of linseed, and the whole is then subjected to pressure.

It need hardly be stated that this plan is of immense service by economising space.

Extracts from British and Foreign Journals.

ON THE THERAPEUTIC ACTION OF THE CHLORATE OF POTASH.

MUCH that is unsatisfactory at present exists respecting the *modus operandi* of this salt; and some have even thought that many of its properties are comparatively unknown, and that this had led to its non-appreciation as a therapeutic agent.

Dr. Fountain, of Davenport, Iowa, in the *New York Journal of Medicine*, appears as a warm advocate for its medical employment. He says, "An experience of seven years in the frequent use of this salt in various affections, and often with surprisingly favorable results, enables me to speak confidently of its properties as a medicine, and to present some facts in relation to the same heretofore unnoticed."

Having adverted to the composition of the salt, and the readiness with which it yields up its oxygen on the application of heat to it, he proceeds as follows :

"In the present article I propose to show that this same property, viz., the large amount of oxygen in loose combination, constitutes it an agent of great power in the human economy, and furnishes us with the means of aiding the operations of nature in some of the vital functions of the body, and in important ways controlling the effects of disease and injuries. The peculiar mode of its operation, physiologically considered, will be noticed after presenting some evidence of its practical utility in the treatment of disease. From the facts and cases here offered, some data can be obtained upon which to found a tolerably well sustained opinion, relating to its physiological action in many conditions of the body, in which it manifests its greatest power, while in others it must remain as yet a matter of hypothesis."

The first cases in which Dr. Fountain successfully employed the chlorate of potash were mercurial stomatitis, and "he never knew it to fail." He also resorted to it in a malignant form of ulceration of the pharynx, and likewise of typhoid pneumonia, with equally beneficial results. In reference to the last case he says :

"I will now call attention more particularly to the peculiar property of the chlorate of potash, which I consider paramount to all others, and one which appears to be entirely unnoticed in any practical application by the profession generally. This property is manifested in its power as an oxydizing remedy by which the chief function of respiration is

aided and supported as its primary effect, and secondarily the process of absorption is stimulated and increased by its agency. This has been partially exemplified in the preceding case, but in those which will be presently related this effect will be far more strikingly manifested, and its practical utility shown to be of the utmost importance.

“The first illustration of the efficacy of the chlorate of potash in promoting arterialization of the blood which came under my observation, was manifested in a case of cyanosis from disease of the heart. The patient was under the care of my brother, Dr. Hosea Fountain, of Yorktown, New York, and by him was my attention called to the following phenomena; the cyanosis had existed for several years in an adult, from gradually progressing organic disease of the heart, attended with dyspnœa, general weakness, &c. As an experiment, he gave the chlorate of potash, with the view of furnishing oxygen to the blood. After the administration of a few doses, the peculiar blue colour of the skin entirely disappeared, and the dyspnœa was very much relieved. When the use of the chlorate was discontinued, the blue colour returned as before, and again disappeared when it was resumed. During the period of about a year following until the death of the patient, this article was used almost every day, and always with the same effect, establishing a direct connexion, as cause and effect, between the administration of the chlorate of potash and the disappearance of the blue colour of the skin—in other words, it directly *demonstrated* the fact that its administration arterialized the venous blood, which was circulating through the capillaries in all parts of the body. So striking was its effect in this particular, that it convinced me of its power as a remedial agent in supplying us with the means of meeting an important indication, frequently arising in the practice of both medicine and surgery. Since then, now many years ago, I have frequently used it for such purposes, and generally with happy effect.”

A case of *Hydrothorax* likewise yielded to it, and for scarlatina it is with him a favorite remedy.

“I will not stop here to discuss what value this salt may possess as a remedy for scarlatina. I will merely say that I regard it as one of the valuable remedies we have in the treatment of some forms of this disease; but by no means as a specific. My object is not to present the claims of this medicine as a specific in any disease (excepting, perhaps, mercurial and ulcerative stomatitis), but to *establish a general principle* of its action by which it can be applied to a great variety of diseases in certain stages and conditions. If I succeed in this it will be found to have a wide range for its sphere of usefulness, and will establish in therapeutics a principle of treatment co-extensive with the practice of medicine and surgery.

“It is hardly necessary for me to state that the abstraction of oxygen from the atmosphere is the great function in respiration paramount to all others; and next to this is the evolution of carbonic acid, but this is a depurating, while the former is a vitalizing process. Modern researches have established these truths beyond all controversy, and it is no longer contended that the oxygen merely decarbonizes the blood without entering into the circulation, except by those entirely unacquainted with the present state of physiological science. *Oxygen is the great motive power of the human machine.* It is ‘the leaden weight or bent spring which keeps the clock in motion, and the inspirations and expirations are the motions of the pendulum which regulate it.’

Without the constant influence of this agent, all the primary functions of the body, animal and organic, would immediately cease. Dr. Carpenter, in his 'Human Physiology,' says; 'The introduction of oxygen into the blood is necessary for the maintenance of those peculiar vivifying powers by which the nervous and muscular systems are kept in a state fit for activity, and its union with their elements appears to be a necessary condition of the manifestation of their peculiar powers.' The sources of carbonic acid are given as follows: 'First, the continual decay of the tissue common to all organised bodies; second, the metamorphosis peculiar to the nervous and muscular tissues, *which is the very condition of the production of their power*; and third, the direct conversion of the carbon and hydrogen of the food into carbonic acid and water, which is peculiar to warm-blooded animals.'

"In this question the author points out the sources of carbonic acid, but it will be observed that in all these changes the presence of oxygen is a prerequisite. The process of disintegration within the body, like that of the decay of all organised bodies without, is one of slow combustion; and in each the first product is carbonic acid, formed by the union of the free oxygen with the carbon of the tissues.

"With every breath that we draw, and every motion of our bodies, oxygen is required to furnish the power which is called into activity by nervous influence. When we consider how universal and how constant are the demands for this vitalizing element, can we wonder at the mischief produced by withholding from the body its regular supply? And when we consider how frequently this supply is interrupted in the course of disease, it appears strange that this subject has received so little—I might almost say *no* attention at the hands of the profession."

It is evident, from the above extracts, that it is the opinion of Dr. Fountain that the great benefit resulting from the chlorate of potash arises from its supplying the blood with oxygen, or directly promoting the arterialization of this fluid. He combats the idea that the chlorine in it has any value.

"Some considerations induce me to think it is not the chlorine but the liberated oxygen which constitutes the chlorate of potash a remedy of value in scarlatina and kindred diseases. If its virtue consisted in the chlorine alone, would not the inhalation of this gas answer equally as well, if not better? There is reason to believe that the decomposition of this salt takes place to a greater or less extent in all parts of the body in which the blood has free circulation, and that its peculiar power in all putrescent diseases, and perhaps in the various affections of the mouth, may be due to the nascent oxygen exerting its peculiar chemical affinities at the instant of its liberation.

"It is well known to chemists that oxygen and other gases, when in a *nascent* condition, possess properties and powers which are peculiar to that state. In this manner gold is dissolved in aqua-regia. When the nitric and hydro-chloric acids are united, a double decomposition takes place by which nitrous acid and chlorine are evolved, and it is the nascent chlorine which acts upon the gold. In pure chlorine gas the gold would remain for ever unchanged, but at the instant of its becoming disconnected from some chemical combination it exerts an influence of unusual character, so that even gold yields to its newly acquired power. Again, chlorine acts as a bleaching agent indirectly by liberating free oxygen from the water of the dampened fabrics, and it is in reality the

nascent oxygen which ultimately acts upon the colouring material. Chlorine has no effect upon goods which are perfectly dry; but let them be moistened with a little water and immediately the bleaching process commences. The presence of water being always necessary, it is reasonably inferred that the chlorine by its natural strong affinity unites with the hydrogen of the water, forming hydrochloric acid, and the oxygen is liberated in a free state by the decomposition. According to this view, the chlorine merely serves as the instrument by which oxygen is furnished in a nascent condition, and, as in the case of the chlorine in the aqua-regia, at the instant of its liberation it exerts a peculiar power which it has at no other time.

“Is it not possible that as a disinfecting agent it operates in precisely the same manner? By it nascent oxygen may be generated from the vapour of the atmosphere, and at this instant unite with and change the character of many of the unpleasant and injurious effluvia.

“May not the oxygen of the chlorate of potash in the same way correct or neutralise many morbid agents within the body? Though too subtle for detection by human skill, these agents may thus be changed and disarmed of their danger by the operations of nature within her own laboratory.

“It will be observed that many questions relating to this subject are yet open for investigation. One general principle of its physiological and therapeutic operation, I think has been fully established. Let this principle be kept in view, and indications for its use will be frequently observed. In other respects the hints which I have ventured to offer will, I trust, invite the attention of many to the consideration of this subject, and result in a better understanding of some questions which are yet involved in a degree of uncertainty.”

THE USE OF CHLOROFORM AND THE NEW DISINFECTING AGENT.

DR. LOUIS CRUVEILHIER, quoting M. Scrive, says, that never in one instance during the war in the East, did a single accident occur in all the thousands of cases in which chloroform was administered as an anæsthetic; and it was resorted to, not only for every severe operation, but often under hopeless circumstances to allay suffering, so that ample and valuable opportunities were thus afforded for studying its action.

The doctor also speaks highly of the application to ill-conditioned wounds of the mixture of plaster and coal-tar, which was adverted to in our last number. In the *Edinburgh Medical Journal* appears the following, as confirmative of its beneficial action. “A gangrenous wound, with a profuse and fetid suppuration, when dressed with the powder, was instantly deprived of all disagreeable smell. In the case of an ulcerated cancer, with an ichorous discharge, presenting the characteristic fœtor, the odour was in the same way instantly and completely destroyed, when the dressing was

applied. Ulcers of the leg were entirely freed from smell in the same manner. Dressings, poultices, &c., saturated with foetid pus, were completely disinfected by contact with the powder; decomposing fluids, gangrenous products, mortified tissues, pieces of dead bodies in an advanced stage of putrefaction, were also instantly deodorised by the same means. The disinfecting substance seems to stop decomposition; and it keeps off insects, and prevents the production of maggots. The experiments at the Veterinary School of Alfort, under Professor Bouley, made on a large number of wounds and putrid matters, gave results entirely in accordance with those obtained by Professor Velpeau; so that, as far as facts have yet shown, the means promises to be of decided service in surgery.

“It appears that the advantages possessed by the disinfecting powder as a surgical dressing are twofold; for it not only disinfects the discharges, but it at the same time absorbs them,—the former property being probably due to the tar, and the latter to the plaster. It is obvious that the powder may be applied to a great variety of uses besides surgical dressings, and in particular for preventing the smell and putrefaction in dissecting-rooms. One other advantage which the disinfectant presents is its cheapness; the ingredients may be had for almost nothing, and at the present time the powder of Corme and Desmeaux sells for about a shilling the hundred-weight in Paris.”

The *Lancet*, adverting to it, says:—

“The French Academy continue to discuss the properties of the composition of plaster and coal-tar as described by MM. Corme and Desmeaux, which M. Velpeau introduced with so surprising a flourish of trumpets, and which that learned body received with premature acclamation. It borders on the ridiculous to observe the gravity with which the simplest facts and most trite remarks are hazarded as oracular novelties, and with how much of mystery and circumlocution every-day matters are discussed. Certainly, if such a composition had been introduced at a small practical society, or to half a dozen working medical men, its value would have been far earlier and more accurately appreciated. Meantime a series of papers are presented on the subject. Amongst others is a communication to this eminent body from M. Renault, in which he gives an account of a long series of his experiments, instituted ‘to determine whether it is the coal-tar or the plaster which possesses the disinfecting property!’ He wishes also to determine whether there be any other substances capable of producing similar effects. He concludes

that plaster alone will attenuate the smell in a very slight degree, but can do nothing more! Coal-tar alone destroys the smell; it is therefore the coal-tar which is the real disinfecting agent. The oil of bituminous schistus produces the same effect as coal-tar, but its odour is more acrid and disagreeable. Vegetable tar produces the same effect as coal-tar, and its smell is less disagreeable; it might therefore be usefully substituted. The plaster is only useful as a convenient and highly absorbent vehicle. M. Paulet thinks it useful because, being a sulphate of lime, it fixes the carbonate of ammonia by a double decomposition."

For our parts we should prefer *Mr. M'Dougall's disinfecting powder*, which we have previously noticed, and which contains sulphurous and carbolic acids united to magnesia and lime. The sulphurous acid will decompose the fetid binary compounds of hydrogen, while the carbolic acid, a substance obtained from coal-tar, and allied to the alcohols in its chemical deportment, prevents putrescence.

POINTED METALLIC BODIES SUPPOSED TO HAVE BEEN SWALLOWED WITH THEIR FOOD BY RUMINANTS.

THE following list of substances is given by Mr. J. J. Murray, M.R.C.S. Eng., in a late number of the *Medical Times and Gazette*.

"In the *Recueil de Médecine Vétérinaire* for June last, M. Boizy relates six cases in which pins or needles, which had been swallowed by cattle with their food, penetrated the pericardium or the walls of the heart, and so caused death. That such cases are most frequent among ruminants, M. Boizy ascribes to the manner in which these animals swallow their food almost unmasticated, and to the fact, that they are generally tended by women, from whose dresses the pins and needles probably proceed.

"Frei found a knitting-needle penetrating the pericardium of a cow, to the extent of half an inch.—Canstatt's *Jahresbericht über die Leistungen in der Thierheilkunde*, 1851, p. 40.

"Fischer found a nail transfixing the reticulum and heart of a cow, which had died after a short illness.—*Ibid.* p. 40

"A piece of iron wire, two inches long, was found in lymph connecting the reticulum, pericardium, and heart in a cow, which had, for some period, suffered from constant cough, but had eaten heartily till the day before death.—*Archiv für Thierheilkunde, von der Gessellschaft Schweizerischer Thierärzte.* Neue Folge, 8 Band, p. 25.

“A case in which similar appearances were discovered, but in which the foreign body had disappeared, is related by Brennwald.—*Ibid.* 1850, p. 62.

“In a like case, Mauer found a piece of iron wire in the wall of the left ventricle.—*Ibid.* p. 25.

“Von Sindenberg gives a case of the cow in which a plank-nail, four inches long, surrounded by pus, was found to transfix the reticulum, diaphragm, and heart, which were agglutinated by lymph.—*Magazin für die gesammte Thierheilkunde.* Herausgegeben von Dr. E. F. Gurlt, and Dr. C. H. Hertwig. Berlin, p. 190.

“Von Eckerdorf cites a case in which the reticulum and diaphragm were found transfixed by half a roofing nail (Schindelnagel). *Ibid.* p. 417.

“Körber found a needle penetrating the adherent pericardium and left side of the heart of a cow.—*Ibid.* 1850, p. 398.

“In the same journal (1847, p. 147), Schöle describes three analogous cases. In the first the reticulum was adherent to the diaphragm, through which there was a small fistulous opening. The foreign body was not discovered, having probably again found its way into the second stomach. In the second, the pericardium was enormously distended, and a hair-pin transfixed the heart, pericardium, and reticulum. In the third, a sewing-needle was found transfixing the reticulum and diaphragm, injuring the pericardium at its apex.

“Zimmerman observed three cases of traumatic disease of the heart as the result of penetration of its walls by sharp bodies.—*Thierärztliche Zeitung.* Herausgegeben von den Lehren der grossherz. Badischen Thierarzneischule Red. C. A. Fuchs. 4. Jahrgang, Carlsruhe, p. 21.

“Werner gives a case in which a table-knife, seven and a half inches in length, passed from the reticulum to the left ventricle of the heart, penetrating its substance to the depth of two lines.—*Centralarchiv für die gesammte Veterinärmedizin und die Veterinärärztlichen Standes-und Vereinsangelegenheiten.* Herausgegeben von Dr. J. M. Kreutzer, Prof. in München, 1848, p. 165.

“Franzisci relates a case of emphysema extending over the whole body from a ramrod, fourteen inches long, having passed through the diaphragm, and wounded the under surface of the left lung and thoracic walls.—*Thierärztliches Wochenblatt*, redigirt von Niklas, Landgerichtsthierarzte im Neu-Ulm. 1. Jahrgang, 1849, p. 29.

“Rainard says that needles frequently pass from the œsophagus to the heart, in some cases sticking in the substance of the heart, and in others remaining free in the pericardium.

He describes a case in which it is probable that the needle passed through the vena cava into the substance of the heart.—*Journal de Médecine Vétérinaire de Lyons*, 1949, p. 425.

“Murray records a case in which a headless brass pin, three inches in length, had transfixed the pericardium and left ventricle, causing death.—*The Veterinary Record, and Transactions of the Veterinary Medical Association for 1849*, p. 244.

“Several other such cases are alluded to in the ‘Dictionnaire de Médecine, de Chirurgie, et d’Hygiène Vétérinaires,’ par M. Hurtrel D’Aboval. Tome 1°, p. 578, et seq. Article ‘Corps étrangers.’ ”

THE FOOD OF PLANTS.

(Continued from page 526.)

Vegetable mould is a loose black mass, obtained from plants putrefied in the open air without any mixture of animal matter; it causes plants to grow with great vigour, and must contain or constitute of itself a great source of nutriment. New countries owe their fertility to this substance. When exposed to continued cultivation it is dissipated, and the soil is impoverished. Two hundred grains of oak mould distilled, and the same quantity of undecayed oak, gave as under:

	MOULD.	OAK.
	<i>Inches (Fr.)</i>	
Carburetted hydrogen gas	124	116
Carbonic acid	34	29
	<i>Grains (Fr.)</i>	
Water containing pyrolignate of ammonia	53	80
Empyreumatic oil	10	13
Charcoal	51	41½
Ashes	8	0½

Mould, and the vegetables from which it is derived, give nearly the same results; but mould contains more charcoal than the vegetables, and more ammonia, and consequently more azote.

Plants contain but few elements in their construction and organization, and are chiefly composed of charcoal and aëriform matter. They give, by distillation, volatile compounds, of which the elements are pure air, inflammable air,

coaly matter, and azote, or that elastic substance which forms a great part of the atmosphere, and is incapable of supporting combustion. They derive these elements either by their leaves from the air, or by their roots from the soil; and the sap, which nourishes the plant, and is finally converted into substance, in order to add to its bulk by extension of parts, is derived from water or from the fluids of the soil, and is altered by, and combined with, principles derived from the atmosphere. The principles of vegetable matter contained by manures from organized substances are, during putrefaction, rendered either soluble in water or aëriform; and in these states they are capable of being assimilated to the vegetable organs. No one principle affords the pabulum of vegetable life; it is neither charcoal nor azote nor hydrogen alone, nor oxygen, but all of them together, in various states and combinations (*Davy*).

The fixed alkalies consist of pure air and highly inflammable metallic substances; but there is no reason to suppose that they are resolved into their elements, in any of the processes of vegetation.

Elastic fluids are by some thought to constitute the chief food of plants, and the principal cause of the fertility of soils. Carbon, being the only fixed ingredient in plants, is insoluble in water or in the acids of the soil, and only in combination with azote and oxygen. Heat is very favorable, as without its agency no substance can assume the gaseous form.

Oils have also been supposed to enter into the food of plants, as some oily productions are found to be great improvers of land; but oils are not miscible with water, and must suppose the presence in the soil of lime, chalk, marl, or soap-ashes, to convert them into a transmissible state.

The earths are not convertible into the elements of organized compounds—carbon, hydrogen and azote. They consume very small quantities of earth, found in their ashes, and are not converted into new products. They give hardness and firmness to the organization in an epidermis of siliceous earth, and strengthen and protect it from the attacks of insects and of parasitical plants. Soils and their bases, the metals with oxygen, are not altered in vegetation: they may be corrected by a modification of their earthy constituents, by probably affording a better receptacle for the absorption, retention, and giving off of moisture, and the means of useful and fertilizing combinations.

Experiments have been quoted to show that the soils exerted a powerful influence on the quality of metallic oxides contained in the plants; for, though the composition of the

ashes differ, the quantity of oxygen contained in all the bases is the same, or an equal number of equivalents of metallic oxides. And hence the opinion has been entertained, that plants do not produce any inorganic substances, alkalies, or metallic oxides.

Carbonaceous matter, in all active manures, must be in a state of combination soluble in water; and lime also, pure or in a state of salt. Magnesia and alumina may be rendered so by means of carbonic-acid gas; and silica may be dissolved in water; and though we cannot comprehend the different changes and combinations, we may conclude water to be the prime agent. The proportion of earthy matters in plants is considerably influenced by the soil on which they grow; but whether they derive the whole of these fixed principles from the soil, or form them partly by some unknown powers of vegetation, has not been satisfactorily ascertained. Some would lead us to believe that all the earths are derived from the soil; others, that a portion at least is derived from vegetation, as in the case of plants wholly removed from the soil. But plants removed from contact of the earth do not arrive at maturity, or produce fruit, and contain much less carbonaceous matter than others of the same kind.

Plants decompose common air, and change it into carbonic-acid gas, forming carbon for the use of the plant. In light, oxygen is given out by the leaves of plants, and carbon retained; in the dark, oxygen is inhaled, and carbonic acid given out. But coal constitutes only one third—or, according to Lavoisier, 28-100ths of carbonic-acid gas; and the atmosphere contains only a thousandth part of fixed air, or, as before mentioned, according to Lavoisier, none at all.

In Hassenfratz's theory the difficulty lies in accounting for the quantity of carbon that trees find in one place, as they have no locomotive powers to go, like animals, in search of food. But both that writer and Ingenhousz are candid enough to admit that both the earth and air may combine in affording materials for the growth of plants.

It has been long and very generally supposed, by vegetable physiologists, that "humus" and its modifications formed the chief food of plants, and that alkalies were necessary to promote the decomposition. The name of "humus" was applied to the vegetable layer, or mould, arising from the putrefaction of organic substances, the quantity and quality of it indicating the fertility or barrenness of soils. But, properly speaking, humus is only a particular portion of the vegetable layer in a certain state of preservation, and does not extend to the stratum of mould that has generally received

that name ; consisting of vegetable matters, partly decomposed, but not completely disorganized ; resembling a plant without organization, pervading and nourishing others. Humus being slightly soluble in water, it was supposed to yield materials capable of being absorbed by the roots of plants, and the soluble parts were called "humic acid," and the insoluble "humin," or coal of humus ; carbon being, as usual, the chief constituent element. But it has been found that humus requires 2500 times its own weight of water to dissolve it—a much greater quantity than nature affords ; and the very trifling portion of alkalies in many soils would be insufficient to yield any great supply of carbon from that source. On lands that are regularly mown, humus increases, and yields as much carbon as manured grounds. It is thence conjectured that the air supplies the carbon, as it has been incontestably proved that plants imbibe carbonic-acid gas, retain the carbon, and emit the oxygen. Water is a prime agent, and the elements of it may be decomposed and assimilated by plants at the same time. From the very small quantity of carbonic-acid gas in the air, and of carbon with the gas itself, it may be supposed that the vegetative process possesses the power both of assimilation and of augmentation. Experiments made by supplying carbonic acid and water to plants failed, because other necessary ingredients were wanting. The decaying vegetable matter, by converting the oxygen into carbonic acid, affords the first food to plants till the leaves are able to perform the functions of inhalation. The carbon is thus derived from two sources ; from the humus in the soil in the first place, and then from the atmosphere.

Ammonia, in different forms, is a powerful promoter of vegetation, and is thought to afford the nitrogen to plants, being itself a compound of nitrogen and hydrogen ; or, ammonia $17 = 14 \text{ nitrogen} \times 3 \text{ hydrogen}$. Ammonia exists largely in manures of various kinds, and in plants it forms several colours ; it abounds in the last products of all animal substances, and in rain and in snow-water ; the smell exhaled by the ground after the melting of snow most sensibly showing its presence. The use of gypsum, charcoal, and burned clay arises from their fixing and retaining ammonia ; and oxides and ferruginous matters also possess that property. It has been supposed that manures act only by the formation of ammonia ; but nitrogen, or the product of ammonia, exists sparingly in vegetables, and with the nature of that elementary body, whether it be simple or compound, we are, as yet, very imperfectly acquainted. Plants contain a great preponderance of carbon over the azote, and animal bodies the

contrary ; and pure vegetable substances are doubted to contain any azote. Such is the uncertainty that attends the most plausible theory on this subject.

It has been supposed by several eminent physiologists, that plants eject fæces like animals, and that the excrements are converted into humus by exposure and cultivation. It has also been supposed that the fecal exudations of one plant supply food to another that is of a wholly different kind, and that the benefits of alternate cropping are derived from that source. But no instance is known, in the animal world, of any one individual deriving its support directly from the excrements of another ; it seems to be repugnant to the laws of nature, until the substance has undergone many modifications, and has been converted by the process of assimilation into animal and vegetable food. The theory is only a modification of the old hypothesis, that plants have a power of choosing and rejecting, and that different plants require different food. The excrements are supposed to restore to the soil the carbon they derived from the humus during the early period of growth, and alkalies and ashes may hasten the decomposition ; but it is still uncertain if the exudations be derived from the soil, or from some other source, or formed by the plant itself ; and until that be ascertained no certainty can exist of the justness of the theory.

Experiment has not yet decided if soluble animal and vegetable matter passes unaltered into plants, and becomes a part of their organization. If it does pass, it must be by many combined and unseen agencies ; and it is very probable that water, air, and earth, although they do not singly afford the food of plants, all of them operate in the process of vegetation. It is probable that we are yet unacquainted with any of the true elements of matter ; for general substances, that were formerly thought simple, have been decomposed, and the most recent discoveries are by no means sufficient to penetrate into the deep mysteries of organized life, and it is doubtful if the propagation of vegetables has been in any degree rendered more intelligible or easier of comprehension. The original vegetables—lichens and mosses—that grew on the naked decomposing rock, could have little other food than water and atmospheric air ; and though chemists yet regard carbon as a simple and uncompound substance, and have found it in water and in air only in a very minute degree, but by some supposed to be decomposable, we may very reasonably think that water and air are the chief ingredients of the food of plants ; and, if the conclusion be true, it is more curious in speculation than in practice, for it

is certain that no plants can be raised to perfection without the aid of vegetable mould. Plants growing in a rich soil must derive nourishment from it in some way ; for if removed to one less fertile, they decay, and often die quickly. Sap is ascending and descending ; rises in the spring to the leaves, where it is elaborated, and undergoes some change, and descends to every part of the plant, becomes a part of the substance, and adds to the bulk. Sap is also changed at the first entrance by the vessels of the roots ; for ingrafted plants can derive from the common stock the sap peculiar to itself. But what that sap, or food, or substance is, we have not been able to discover, owing to the minuteness of the rootlets, fibres, tubes, and pores, which almost escape detection by the microscope ; and it may be very reasonably presumed to be in a state of solution as it ascends the organs in a liquid form. But in what way, or by what peculiar operation, the soil and manures yield the food in a liquid, or in any other form, and become so highly conducive to the growth of plants, is a point of very difficult research, and all the conclusions yet formed on the subject must be regarded as matters of very doubtful speculation. Fortunately, the importance of being known seems much less than the difficulty of obtaining the knowledge ; for, if we were in possession of the latter as amply as could be wished, it is doubtful if any useful result would be derived, or if it would not rather remain a part of the ostentation of science, containing most beautiful scientific truths, but totally irreducible to practice.

(To be continued.)

REMARKS ON THE INCREASE OF MUSCULAR FIBRES.

THE muscular fibres of animal life, according to M. Budge, increase in number with age, and the development of muscles in bulk does not depend solely upon increase of size of the fibres. He gives the following figures to show the changes : size of the fibres of the gastrocnemius muscle of a frog—Frog of the length of 13·00 mil. 1053 fibres ; 17·00 mil. 1727 ; 33·75 mil. 1925 ; 33·85 mil. 2271 ; 46·00 mil. 3434 ; 80·00 mil. 5711. Moreover he states that in a frog left without food for three months and a half the number of the fibres were 3364, and that they were very fine ; while in a like frog left in its normal state the number of fibres was 4462, and their structure normal.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Annales de Médecine Vétérinaire, Bruxelles,
For June, 1859.

INTERMITTENT LAMENESS CAUSED BY THE OBLITERATION OF THE ILIAC ARTERY.

By Dr. CHARCOT, of the Hospital.

THIS case occurred in a man, fifty-four years of age, of a strong constitution, a house-painter by trade. He had served in the African war in 1830, where he received a ball in the right groin, which had not been extracted. He followed the trade of house-painting ever since he left the service, and had been in good health with the exception of three or four attacks of painters' colic. About eight months ago, just after he had eaten his dinner, he was suddenly taken with vomiting blood, after which he voided per anum a large quantity of the like fluid, but very dark coloured. This produced syncope, but three days after he was well enough to return to his occupation. From this time, the symptoms which the author describes, appeared. When the patient walked for a quarter of an hour he felt in the whole of his right leg a weakness accompanied by numbness. If he attempted to continue his walk, dull pains, with pricking sensations, followed; which manifested themselves first in the penis, and extended to the thigh, leg, and foot. These were followed by severe cramps and stiffness of the leg, which he was unable to move, and the patient was obliged to sit down for a few minutes, after which, the symptoms having disappeared, he was able to continue his walk; but in about twenty minutes the same effect would be produced, and these paralytic attacks would recur five or six times in the course of an hour, but never while he was in repose, seated, or stationary. Locomotion alone would excite a recurrence of the attack. During the intervals, the limb was capable of the same motion, &c., as the other, and no unusual sensations were felt in it, but whether the temperature was lower during the accession, or if the skin was

affected anæsthetically, has not been ascertained. These attacks of paralysis showing themselves during the week, and disappearing after a few minutes' rest, did not prevent the patient from following his usual occupation, but the vomiting of blood and the hæmorrhage were of frequent occurrence, which necessarily caused great prostration of strength, with palpitation of the heart; and on the least exertion, painful throbbings were also felt in the umbilical region. The limb was likewise weaker than the corresponding one, and the suffering after walking was more intense. On being admitted into the hospital, his state was as follows: anæmic; the skin of a waxy, yellow colour; there were no signs of hypertrophy of the heart; strong pulsations were felt on applying the hand to the epigastric region, but no tumour existed there, auscultation and percussion giving no indication; the functions of the rectum and the bladder were normal; the urine was not albuminous; the appetite was still good, and the patient strong enough to walk; but after a few steps the numbness and pain manifested themselves in the leg and thigh; the limb, however, showed no difference in size or nutrition when compared with the other, neither was there any difference in the sensation or temperature.

On the 12th, the palpitations, cardiac and abdominal, were more violent. The patient was unable to leave his bed. He had every night violent pains in the course of the sciatic nerve, which lasted for about an hour. These attacks were regular for five days, but they were removed by the administration of quinine.

On the 20th, the patient had a severe fit of syncope. When sensibility was restored, he vomited a large quantity of blood, which quickly coagulated. The syncope returned several times, and he died in one of them the next morning.

On the autopsy of the body, an aneurism the size of a hen's egg was found on the iliac artery. This tumour communicated on the left superiorly with the inferior part of the aorta by a large orifice, which replaced the communication of the iliac artery with the aorta. There was also an opening into the jejunum, at the point of union of that intestine with the duodenum. The parietes had a degree of thickness, and assumed the hardness of fibro-cartilage. Internally it was lined with superposed layers of fibrine, and nearly filled with concretions of the same nature, which were of more recent date. Two thirds of the iliac artery were thus invaded by this tumour, while the remaining inferior part was obliterated. The left iliac was strongly com-

pressed by the tumour, flattened, and pushed upwards. The iliac vein was obliterated. The corresponding one on the right, on the contrary, was permeable. In the vicinity of the right sacro-iliac articulation was found *a ball of a large size*, lying nearly in contact with the iliac artery. It was enveloped in a dense cellular tissue, by which it was attached to the surrounding parts. As to the means by which the circulation was carried on, the lumbar arteries were very much enlarged, and the ilio-lumbar vein was of a considerable size. The posterior aorta presented nothing abnormal. The heart was of the natural size, and without any valvular alteration. The lungs were emphysematous and bloodless, but otherwise healthy. The duodenum and jejunum were filled and distended by fibrinous clots, which were discoloured and formed in concentric layers. From this a sort of appendage extended to and penetrated into the opening of the tumour, which established the communication between the aneurism and the intestines. The ilium and the larger intestines were also filled with a dark fluid, evidently altered blood. The stomach contained a quantity of blood, of a less dark colour. The muscles of the leg presented no alteration.

M. Bouley Jeune was the first veterinary surgeon who drew the attention of the profession, in 1831, to intermittent lameness in the horse, as produced by the obliteration of the arteries, (*Arch. Génér. de Médecine*, t. xxvii, p. 425, 1831).

M. Goubaux afterwards treated the subject more fully in a memoir on "Paralysis, caused by the obliteration of the Posterior Aorta in the Horse" (*Recueil*, t. xxiii, p. 578, 1846).

Several articles have also appeared in the journal of Gurlt and Hertwig '*Magazin für die Geammte Thierheilkunde*,' iv, J. 1838, S. 455; ix, J. 1843, S. 221, 461). See also Romberg (*Lehrbuch der Nervenkrankheiten*, &c., ii, Abt. S. 13).

For July, 1859.

RÉSUMÉ OF THE GOVERNMENT VETERINARY REPORTS.

In the province of Antwerp, contagious diseases among the equine tribe were glanders and farcy, 6 cases, 1 of which was cured. Among the ox tribe, 105 cases of pleuro-pneumonia, of which 33 were cured.

M. Moons remarks that the system of indemnity for the

slaughter of infected cattle does not answer the intention of the government, inasmuch as the indemnity is too small, it being more the interest of the owners not to give notice in cases where their cattle are attacked by pleuro-pneumonia; they consequently give the preference to the butcher, who offers a higher price for the diseased animals than the indemnity fixed by the government.

WEST FLANDERS.

The diseases during the quarter here were glanders and farcy, 22 cases, out of which 5 were cured; pleuro-pneumonia, 100 cases, out of which 41 cases were cured.

Among the above cases of glanders, MM. Demeester, at Messines, and Loontjers, at Ingelmunster, report two cases of glanders cured by the administration of phosphorated oil; dose, 20 minims per diem.

ENZOOTIC PULMONARY EMPHYSEMA.

M. Demeester describes under this title a disease in cattle which at times causes severe losses to the cultivators of the land. The symptoms are—staring coat, eyes dull, the nose dry, the mucous membranes slightly injected, respiration short and accelerated. When the malady is of a few days' duration, the ribs become a little elevated, which denotes a dilatation of the chest and distension of the lungs. At the beginning, auscultation detects increased *souffle*, afterwards crepitation, with a slight whistle in some parts. Percussion gives a more sonorous sound than usual. There is a dry, hacking cough, and when the attack is more severe, the respiration becomes difficult and painful. Contrary to what takes place in pleuro-pneumonia, the patient is insensible to the pressure on the back. There is little loss of appetite, except when the attack is fatal. The evacuations are dry and hard, yet the pulse is but little altered. Though very different from pleuro-pneumonia, this disease often presents the character of that malady. M. Demeester thinks that this disease is contagious. This opinion principally rests on the fact that it is in general communicated to all the beasts in the same stable, but this rather proves that the causes which produce this affection are very intense, and that all the animals exposed to their influence become affected.

This malady attacks, in preference, the young stock that are left night and day in the meadows during the autumn, when the days are warm and the nights cold. The grass is also then less nutritious, hence a general relaxation of the tissues ensues.

Autopsia.—It is found that in animals who have died of this disease the lungs remain in a state of distension, although there is no hepatization; but there is a quantity of air diffused under the pleura, and in the interlobular tissue, similar to that found in broken-winded horses. All the other organs are found healthy.

The treatment, which is generally efficacious, consists in the avoiding of bleeding and the use of sedatives, as well as revulsives; but tonics and astringents must be freely administered. The diet should also be changed from the green debilitating food to the dry and stimulating. Under this system the animals soon recover; but it sometimes happens that they remain asthmatic, and the cough is persistent. In these cases tar-water, colophony, and the Balsam of Tolu must be resorted to.

M. Demeester observed this malady to exist in 85 heifers and 30 cows last year, none of which have died.

EAST FLANDERS.

The following epizootic diseases prevailed during the quarter, viz.—18 cases of glanders and farcy, 7 of which were cured; 378 cases of pleuro-pneumonia in cattle, out of which 117 were cured; 123 cases of aphthous fever, which were all cured. In the pig, there were 24 cases of charbon, of which 5 were cured.

M. Delrée has observed a large number of cases of diabetes in the horse, which he attributes to the foreign barley on which they had been fed. They were successfully treated by the preparations of iron, and change of diet. The same practitioner records two cases of poisoning, by phosphorus, in the cow. It was found in the chymous matter contained in the stomach, which had a strong characteristic smell. When this matter was put in a dark place, it emitted phosphorescent sparks. It is supposed that the phosphorus was obtained from some matches which had accidentally got amongst the peelings of potatoes which were given to the cows.

HAINAUT.

The epizootic diseases here were—71 cases of glanders, of which 6 were cured; 33 cases of farcy, of which 5 were cured; pleuro-pneumonia, 97 cases, of which 34 were cured.

LIÈGE.

The epizootic diseases observed in this province are as follows: Farcy and glanders, 76 cases, cured 8; pleuro-

pneumonia, 66 cases, cured 13. Charbonous typhus in the horse, 66, cured 13; in the ox tribe, 171, cured 44; in sheep, 105, cured 37; in swine, 194, cured 41.

LIMBOURG.

In the last two quarters there were 9 cases of glanders; 32 cases of pleuro-pneumonia, cured 6; typhous charbon, 6, which were in cattle. This report does not contain any further remarks.

LUXEMBOURG.

There were 46 cases of glanders, 2 cured; of charbon, 6 cases in the horse, and 92 in cattle; 165 cases of mange in sheep. No other remarks are made.

NAMUR.

The epizootic diseases observed in this province were, 25 cases of glanders, 2 of farcy, 16 of pleuro-pneumonia; of charbon, 3 cases in the horse, and 6 in cattle.

CASE OF VOMITING IN A FOAL.

By M. VON EXEM, à Folx-les-Caves.

The subject of this attack was a foal. It refused its food, when down showed signs of abdominal pains, and ejected through the nostrils a quantity of semi-liquid ingesta. Its neck was extended, the countenance was anxious, there was tremor, it pawed the litter, the decubitus was in the attitude of the dog, the mouth was filled with saliva, the nostrils were besmeared with the matter brought up from the stomach; a gurgling noise could be distinctly heard at a distance, the alimentary substances which caused it were from time to time ejected. The animal would bend his neck, afterwards extend it, and bring up a quantity of food in a semi-liquid state. This would be accompanied by a similar noise to that made in crib-biting, and also sometimes by a fit of coughing. This continued for about forty-eight hours, when the animal died suddenly.

On making a section of the body, nothing abnormal was found in the abdominal cavity. The stomach was healthy, and about half-filled with similar matters to those which had been brought up. The œsophagus contained throughout about one and a half litre of the like substances, some of which was also found in the larynx, trachea, and the bronchial tubes, but it had not produced the least alteration in these parts.

The author is at a loss to account for this state of things, unless it arose from gastralgia.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

The Form of the Horse, as it lies open to the Inspection of the Ordinary Observer. By JAMES C. L. CARSON, M.D.
Dublin: William Robertson, 1859, pp. 139.

IN this little book we find much that is useful to those who are desirous of acquiring a knowledge of many points connected with the form of the horse. The author has also thrown out many valuable hints on breeding and on shoeing. His observations on the results that arise from putting horses to work too early, as well as from their being subjected to too severe work, are well worthy consideration.

“The severe work to which young horses are now subjected is the chief cause of the present great liability to disease. If they were well fed, and allowed to mature their constitutions before being trained, they would, in all probability, remain sound for a considerable time. This, I fear, however, is not likely to be attended to. The *farmer* has so many demands on his purse that he can scarcely afford to allow his horses to roam at large till they reach their fourth year; and the *turfite* finds it more profitable to race his colts at two years’ old, than to keep them over, at heavy expenses, until such time as humanity, and a due regard to the soundness of the animals, would point out as the proper period for their first appearance on the turf. The necessities of the one, and the avaricious disposition of the other, thus render it next to impossible to get good sound stock, either to use or to breed from.”—p. 2.

Dr. Carson having made some very judicious remarks of a prefatory nature, commences a “review of the points of the horse as they lie open to the inspection of the ordinary observer,” alluding first to temperament of the animal, from which some useful facts may be gathered. He then briefly considers the form of the horse, beginning with the head and neck, proceeding to the back, fore leg, hind leg, abdomen, &c. An occasional paragraph, taken from some of the sections into which the work is divided, will serve to illustrate its general character.

“The *head* of every horse should be as small as would be in keeping with the rest of his body. A large, coarse head is a defect in every person's eye, and it has no advantages to counterbalance its deformity. The *muzzle* should be fine, and of a moderate length; the *mouth* invariably deep for receiving and retaining the bit; and the *lips* rather thin and firmly compressed.”

“As in the human being, so in the horse, a great deal of the expression of the countenance depends on the *eye*. It is a most marvellous index to the working of the mind within. A glance at it will often reveal the benevolent feeling, the sulky disposition, or the vicious propensity that is about to manifest itself. The reason of all this must be obvious, when we remember that it is in direct communication with the brain—the material instrument through which the mind operates. The eye of the horse should be kindly, strong, bold, and fiery, yet gentle looking.”—pp. 11, 14.

The observations on the colour of the hair, and the form of the head, are so obvious to all who possess any practical knowledge of the horse, as to need no comment.

“The colour of the hair should also be taken into account, although it has frequently been said that a good horse is never of a bad colour, or, in plainer language, that it matters not, beyond the mere item of taste, what his colour may be. This, I imagine, is a decided mistake, as the colour of the hair has as much to do with the temperament of the horse as it has with the temperament of a man. Observation has led the public to this conclusion practically, as is proved by the everyday saying, that such or such a horse is of a *hardy* colour. How seldom do we find a jet black or a wishy-washy chestnut with as much pluck as a rich chestnut, a deep-blood bay, or a dark brown! The former colours are generally connected with soft, scrofulous constitutions, whilst the latter as often indicate fineness of texture and capacity for endurance.”—p. 15.

The description given of the form of the chest of the horse is, in our opinion, very good. In treating of this subject, the author briefly describes a part only of its anatomy, with what he considers to be the best form for speed and endurance; he likewise alludes to the physiology of respiration, and the circulation.

A few pages are devoted by him to the structure of bone, and muscle. These will be found to assist the reader in understanding many things as he proceeds. The form of the shoulder, the obliquity of the scapula, and the necessity of the muscles which attach the shoulder to the trunk being well developed, are dwelt upon with a view to their physiological importance, and with the discernment of a practical horseman.

“There is a peculiarity in the attachment of the shoulder-blade to

the body, which does not occur in any other part of the animal. All other bones are united together by the intervention of cartilages or joints; but in this case, the union with the body is effected solely by means of muscular substance. There is nothing approximating to a joint. The shoulder-blade is slung, as it were, in a mass of muscle. This arrangement serves completely to break the shock of the gallop or leap, and, at the same time, renders shoulder-lameness a very rare occurrence, except as the consequence of a direct local injury. If the smith and farrier were aware of this fact, they would not trace to the shoulder, as they do, one half of the diseases which are located in the foot and leg. By referring the lameness to the shoulder, the smith can easily get rid of the results of bad shoeing."—p. 44.

We cannot refrain from noticing the last two sentences of the above paragraph, for scarcely a week passes but we are told, on a lame horse being submitted to our inspection that "the farrier said he was lame in the shoulder." This at once leads us to examine the foot, and in many cases we find that the lameness is caused by a prick from a nail.

Passing from the shoulder to what the author terms the leg, we fully concur with the remarks he has made on the form and proportions of each part, with the exception of an unimportant error; for instance, at page 54, he says, "The leg should be thin when viewed in front, as that will show flatness and fineness of bone." Now, this is quite right as far as the whole of the leg is concerned, but the above observations would lead any one to suppose that the bone from before backwards is wider than it is from side to side, which is not the case; for if a transverse section of the bone is made, it will be found that the front view is wider than a side view. Not so, however, with the shank-bone of the hind leg.

The following, we believe, is universally admitted :

"In the racer, the leg must always be short, and the arm long. Indeed this rule holds good in reference to all animals in whom speed and durability require to be united; and, for my part, I think this is by far the most advantageous arrangement for every description of horse."—p. 59.

In reference to contraction the author truly says—

"It appears to me that writers are not sufficiently precise in the use of the term, contraction. They appear to apply it indiscriminately to a natural development and a diseased condition of the heel. This I think is not right. The one might be called a narrow, and the other a contracted, heel. At all events, the same term should not be used in both cases—more especially as there is seldom any difficulty in distin-

guishing between a foot which is narrow by nature and one which is contracted by disease."

"The foot which is by *nature* mule-shaped is not diseased, and therefore is not lame. We may call it a narrow foot, but we have no right to call it a contracted one. It would just be as reasonable to apply the same term to a narrow counter, or a thin shoulder. The word, contracted, should be used only when the parts are diseased. The internal and external parts of a natural, mule-shaped foot are all made on the same scale, and consequently bear such a proportion to each other, that they work in perfect harmony."—pp. 63, 64.

Some observations are made on shoeing, and, brief as they are, they will assist the uninitiated in the art so far as to enable him to superintend the shoeing of his own horses.

The form and position of the fore leg, and also its action, are so admirably described, that if the description is duly regarded, approximation to perfection in most cases will be obtained.

On the form of the back of the horse the author has, doubtlessly, made some very just remarks, but we cannot help observing that he seems to forget the relative position of the vertebræ of the horse as compared with those of man. In the latter they are so arranged as to form a column, and thus the weight is communicated from bone to bone, while in the former they are so placed that the weight on the back is supported by the vertebral ligaments and the muscles. And we are doubtful if the symmetry of the animal would not be interfered with if such means were resorted to as the author advocates, unless greater care and judgment are exercised than is generally the case with those into whose hands the breaking of young horses commonly falls.

The form and position of the hind quarter and leg are alluded to with equal clearness as evinced in the description of the fore limb. And when explaining the proper position of the several bones, the author seems fully aware of the importance of good leverage and well-developed, long muscles.

Referring to the tibia, Dr. Carson says, "The muscles of the tibia terminate in sinews, some of which are inserted into the point of the hock." Such, however, is not the case; and although this anatomical error does not detract materially from the value of the book, we, nevertheless, have thought proper to notice it.

The views which the author takes as to the cause of spavin are such as almost every practical man will agree with, but at the same time we cannot help thinking that he is a little too hard on the shoeing-smiths.

If the form of shoe the author alludes to can be done without, so much the better, as the uneven tread produced by its application certainly must have a tendency to produce undue strain upon some of the ligaments of the tarsus. But there are many instances in which we find it necessary to use such shoes, as no other form will obviate the defect of cutting, which sometimes exists to such an extent that we are induced to risk the evil effects they occasionally may have upon the hocks.

“Injudicious shoeing is another cause of spavin. When the horse is disposed to brush, the smith usually raises him higher on the one side of the heel than on the other. This may so far change his action as to prevent the brushing; but it throws so much more weight on one part of the hock-joint than on another, that disease may almost be said to be the inevitable result. I wish these smiths had the one side of their boot raised an inch higher than the other, in order that they might enjoy the same pleasure which they have conferred upon the horse. They would then, especially if forced to run and jump, have an opportunity of knowing how long their ankle and knee-joints would continue sound.”—p. 117.

On the subject of “in-and-in breeding,” the author says—

“There is not the slightest foundation for the strong prejudice which exists in the public mind against in-and-in breeding. On the contrary, Mr. Smith has plainly established that, within certain limits, this plan is highly advantageous. Many of the best horses, as well as the best short-horned cattle, we have ever had, were very much and closely in-bred. To a certain extent this was unavoidable, when the studs and herds were first formed; but it makes little difference whether it was the result of necessity or of choice. It has fully established the immense advantages of breeding in-and-in, when the stock is of the right sort; indeed, I can see no other possible way of retaining the perfections of any particular strain than that of returning frequently to the same blood.”—pp. 126, 127.

Now if Dr. Carson means from the same family, we should feel inclined to differ from him, for we have strong reasons for believing that it tends very much to cause degeneration. With the same breed of horse, we think judicious crossing is attended with beneficial results. Crossing breeds, and

then breeding from their produce, lead to great disappointment both in the form and quality of the produce.

The following on the *stallion*, we think, is very much to the purpose :

“The result of the first cross is often a good-looking animal. He is considered too good for castration, and consequently is kept for a sire. His apparent strength, good looks, and cheap price, added to a flaming pedigree all on the one side, are sure to command the custom of the district. When the produce, however, comes to maturity, it is found to be of such an inferior class, that there is nothing but loss and disappointment. The foals may look well when they are covered with fat ; but when they come to full size they are a sorry lot. I knew an instance where two or three parties praised a foal of this description. A shrewd countryman who was standing by said, ‘ Had a wee ; it will get like its own sort yet ;’ and so it did. The unfortunate breeders who follow this plan never think of laying the blame at the door of their own stupidity ; but at once jump to the ridiculous conclusion, that the fault lies entirely in their having too much blood.”--pp. 135, 136.

We thus close our somewhat lengthened review of this little book, which at the first we considered to be worthy the attention of horsemen ; and from the practical manner in which its author discusses the various subjects, we are of an opinion that it would form an excellent basis for a volume of much larger dimensions, and this we hope in due time will make its appearance.

PROGRESS OF SCIENCE.

SCIENCE is not of yesterday—we stand on the shoulders of past ages, and the amount of observations made, and facts ascertained, has been transmitted to us, and carefully preserved in the various storehouses of science. Other crops have been reaped, but still lie scattered on the field. Many a rich harvest is ripe for cutting, but waits for the reaper. Economy of labour is the essence of good husbandry, and no less so in the field of science.—*The Prince Consort*.

THE VETERINARIAN, OCTOBER 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat. —CICERO.

THE ROYAL WARRANT FOR THE IMPROVEMENT OF THE RANK, POSITION, AND INCREASE OF THE PAY, OF VETERINARY SURGEONS IN THE ARMY.

IN our last number we were authorised to announce the existence of the above important document. We have now the satisfaction of subjoining a copy of it. The Warrant being no longer a matter of doubt and conjecture—a thing creating alternate hopes and fears—but it being, “fait accompli,” most heartily and sincerely do we congratulate our professional brethren in the army on their possession of it. We feel assured that it will be accepted by them, as it deserves to be, with acknowledgments of gratitude, largely contributing as it must do to their future welfare.

It may be said by some that it is nothing more than a favorable reply to a memorial addressed to the authorities a few years since, and it was only both natural and right for veterinary surgeons to expect, after the surgeons in the army had obtained the boon they had for their services, that they should also receive some augmentation of pay and position. It is true that relatively there may exist a degree of subordination, depending on the comparative value of the animals,—man and the horse; for although it is not possible to put the two in competition as to worth, morally considered, yet as *material* for war and general usefulness it is altogether a different thing. Of what use in the army, at the present day, would man be without the horse? And of what value would the latter be were he not kept in health and vigour and capable of work? Now it is the especial province of the veterinary surgeon to maintain this, as well as to assist nature in her efforts to restore it when lost, from the opera-

tion of causes too numerous to be here mentioned; and it is the possession and application of this knowledge which renders his services so valuable to the public generally.

Those who thus argue know little, very little indeed, of the difficulty that is connected with the obtaining from "the powers which be" any alterations, even so as to secure that which may be considered a right. Much circumspection and unwearied perseverance are called for to effect this, and in proportion to the difficulties encountered, so are the obligations increased to him who undertakes the laborious task. From the first we confess that we entertained no fears whatever as to the result, knowing as we did the great interest possessed by the principal veterinary surgeon to the army, and the motives by which he was actuated.

In every sense we view the document as an important one. It inaugurates an era in the profession, for the whole body must be beneficially influenced by it, since it will tend to raise it in respectability and estimation, by giving a higher tone to the professional education of those who are anxious to obtain appointments in the army. Young men of education have always sought, and always will seek, those situations in life that are consonant with feelings which have been early inculcated, as well as those that offer some return for the outlay made in the acquirement of scientific knowledge.

There may have taken place some delay, and this has been misconstrued into indifference or neglect, or even a failure. It was better, surely, cautiously and deliberately to act, and thus in the end possess that which should be of real and permanent value, rather than hurriedly to accept a proposal that would in the end fail in giving general satisfaction, and lead to disappointment.

We trust that the expectations of those more immediately to be benefited by this warrant will be fully realised. We have carefully perused the document, and believe that there is in it much of real worth. The alterations effected by it are on a liberal scale, and incentives to emulation are held forth by the instituting of grades. This we approve of. All men love honour and distinction; but

they should be laboured for, and here, according to the zeal and exertion manifested, so will be the reward.

With respect to the pay. We remember the time when this commenced with six shillings per diem. It was in good King George's days, when the times were so "hard" that our grandams used to say, "if people can live now, they can live always." Unquestionably the means of living then were much dearer than at the present time.

It was afterwards raised to eight shillings, and now it begins with ten shillings. Surely this is no mean advance; while with increase of servitude there is also a corresponding increase of emoluments.

Does not this gradual addition to the pay of the veterinary surgeon show that the authorities more highly appreciate his services, and approve of the manner in which his duties are performed?

In private practice, it is true, there is a possibility and a probability of a man, possessing scientific attainments and endowed with energy and herculean strength, acquiring greater wealth than in the army; but the amount of labour to be endured ere this is obtained, and all the unpleasantnesses, risks, and anxieties connected therewith, have to be taken into account and placed in the balance before the decision is made.

We believe that in only a very few armies veterinary surgeons take the same position they do in ours. To the late Professor Coleman is due the honour of their being ranked as commissioned officers. Nobly he contended for this, and yet with all his endeavours, and the interest he was known to possess, he could not obtain a higher grade for them than that of captain. Now, however, they may be ranked as major. It is thus seen that greater inducements are now held out to young men to enter the army than was once the case. The duties connected with their appointment are by no means onerous, and the association is gentlemanly. The man of liberal education, and who is practically conversant with his profession, will always find himself respected, while at the same time he will ensure

both the confidence and approval of those who are above him. To such alone are these attractions offered. The examinations will test their professional abilities, but with themselves will rest the esteem in which they will be held. Their responsibility is great, but this will only call forth their mental energies, and awaken those resolutions, the correct performance of which will redound to their individual credit and the profession of which they are members.

In conclusion, we hope we may be permitted, without being thought in the least to interfere with that which does not immediately concern us, to throw out a hint to those who are already veterinary surgeons in her Majesty's service. Undoubtedly, there is that in a consciousness of having done one's duty, or only in endeavouring to do it, even if we fail in accomplishing it, which outweighs every other consideration, and renders us almost indifferent to the opinions that may be entertained by others of our conduct. Nevertheless, the satisfaction which is thus felt is considerably enhanced when those for whom we have laboured appreciate our intentions, and give expression to their feelings. We cannot for a moment think that those who have been thus recently advantaged—for we know most of them, and are privileged to place them on our list of friends—will be slow in giving *tangibility* to their gratitude to him to whom they are so much indebted. Their principal, Mr. Wilkinson, has worked alone. Assiduously has he waited and watched for every favorable moment to urge his claim. Mentally has he toiled, early and late, to gain this promotion for his brethren in the army, which will ever place his name among the benefactors to his profession. But this is not enough. There yet remains something to be done by others. A word to the wise, however, is sufficient, and with this remark we are contented to leave the subject.

“Permitte divis cætera.”

VICTORIA R.

WHEREAS it hath been represented to Us that it is expedient to raise the position and rank of the Veterinary Surgeons of Our Army, and to increase the pay and half-pay of the Officers of that Service; Our will and pleasure is, that, from and after the date of this Our Royal Warrant, the following Rules shall be established for the admission, promotion, and retirement, and for the pay, half-pay, relative rank and allowances of the Veterinary Surgeons of Our Army, and that by these Rules Our Commander-in-Chief shall be governed in recommending Officers for admission, promotion, and retirement.

I. The grades of Veterinary Surgeons in Our Army shall be three in number, viz. :

1. Staff Veterinary Surgeon.
2. Veterinary Surgeon of the First Class.
3. Veterinary Surgeon.

2. No Candidate shall be admitted into the Veterinary Department of the Army, until he shall have satisfactorily passed an examination before a Board of Military Veterinary Surgeons.

3. No Veterinary Surgeon shall be eligible for promotion until he shall have passed such examination as Our Principal Secretary of State for War may require, and shall have served on full pay with the Commission of Veterinary Surgeon for five years.

4. A Veterinary Surgeon of the First Class must have served 15 years in the Army with a Commission on full-pay before he will be eligible for promotion to the rank of Staff Veterinary Surgeon.

5. In cases however of emergency, or when the good of the Service renders such alteration necessary, it shall be competent for Our Secretary of State for War to shorten the several periods of service above mentioned in such manner as he shall deem fit and expedient.

6. Promotion from one rank to another shall not necessarily be given by seniority, but by selection for professional ability and meritorious conduct; such selection to be made by Our Principal Veterinary Surgeon; and the ground of such selection shall be stated to Us in writing, and recorded in the Office of Our Commander-in-Chief, together with the recommendation of the Principal Veterinary Surgeon.

7. The rates of pay of the Veterinary Officers of our Army shall be in accordance with the following Schedule :

	SERVICE ON FULL PAY AFTER					<i>On ap- point- ment.</i>
	25 <i>years.</i>	20 <i>years.</i>	15 <i>years.</i>	10 <i>years.</i>	5 <i>years.</i>	
Staff Veterinary Surgeons	23s.	22s.	21s.	—	—	—
Veterinary Surgeons, 1st Class ...	20s.	17s.	15s. 6d.	14s. 6d.	12s. 6d.	—
Veterinary Surgeons	14s.	14s.	14s.	13s.	11s. 6d.	10s.
Veterinary Surgeons who entered Our service prior to the date of this Warrant	17s. 6d.	15s.	14s.	13s.	11s. 6d.	10s.

8. It is to be clearly understood that all increase of pay from length of service is to be granted subject to a Veterinary Surgeon having discharged his duties with zeal and ability.

9. After the date of this Our Warrant, every Veterinary Officer placed on half-pay by reduction of establishment, or on the report of a Medical Board, in consequence of being incapacitated by reason of ill-health, caused by wounds or brought on by the discharge of his duties, shall be allowed the half-pay which his period of full-pay service may entitle him to, according to the following Schedule.

	<i>After 25 years.</i>	<i>After 20 years.</i>	<i>After 15 years.</i>	<i>After 10 years.</i>	<i>After 5 years.</i>	<i>After 3 years.</i>	<i>Under 3 years.</i>
Staff Veterinary Surgeon	15s.	14s.	The half-pay of his former rank	—	—	—	—
Veterinary Surgeon, 1st Class	13s. 6d.	11s. 6d.	10s. 6d.	9s. 6d.	The half-pay of his former rank	—	—
Veterinary Surgeon	—	—	9s. 6d.	8s. 6d.	7s.	4s.	Temporary Half Pay at 4s. a-day, for a period equal to that for which the Officer has served on Full Pay.
Veterinary Surgeons who entered Our service prior to the date of this Warrant	10s.	9s. 6d.	9s. 6d.	8s. 6d.	7s.	4s.	

10. With a view to maintain the efficiency of the Service, all Officers of the rank of Veterinary Surgeons and Veterinary Surgeons of the First Class shall be placed on the Retired List when they shall have attained the age of 55 years; and all Staff Veterinary Surgeons when they shall have attained the age of 65 years.

11. Officers thus superannuated shall be entitled to the rate of half-pay, stated in the preceding Schedule.

12. Every Veterinary Officer who shall have served upon full-pay for twenty-five years and upwards, shall have the right to retire upon half-pay, at the rate of two-thirds of the daily pay he was in receipt of when thus retiring, provided he shall have served three years in the rank from which he retires, or shall have served in any rank for ten years in the Colonies, or five years with an army in the field. But if he shall not have complied with any one of these conditions he shall be entitled only to half-pay at the rate of two thirds of the daily pay he was in receipt of before his last promotion.

13. Every Veterinary Officer, thus claiming to retire, must give six months' notice to the head of his Department of his intention to claim this right prior to his being allowed to retire; and no Veterinary Officer shall be entitled to give such notice after he shall be under orders to proceed to any foreign station, until he shall have served at such station for one month.

14. If a Veterinary Officer be placed on half-pay from any other cause than hereinbefore mentioned, he shall only be allowed a temporary rate of half-pay, not exceeding the rates stated in Clause 9 for such period and at such rate as shall be assigned to him by Our Secretary of State for War, on a consideration of the length and character of the services rendered by such Veterinary Officer.

15. The relative rank of the Veterinary Officers of Our Army shall be as follows:—

Veterinary Surgeon on appointment as Subaltern.

Veterinary Surgeon of the First Class on promotion as Captain.

Staff Veterinary Surgeon on promotion, as Major, but junior of that rank.

16. Such relative rank shall carry with it all precedence and advantages attaching to the rank with which it corresponds, (except as regards the Presidency of Courts Martial, and of all Military Courts, Committees, and Boards of Inquiry, where Our will and pleasure is, that the senior combatant Officer be always President, and except, further, any military command whatever), and shall regulate the choice of quarters, rates of lodging money, field allowances, forage, servants, fuel, and light, or allowances in their stead, detention and prize money. But when a Veterinary Officer is serving with a Regiment, Corps, or Detachment, the Officer commanding, though he be junior in rank to such Veterinary Officer, shall be entitled to a preference in the choice of quarters.

17. Veterinary Officers shall be entitled to all the allowances granted by Our Warrant of 13th July, 1857, on account of wounds and injuries received in action, as combatant Officers holding the same relative ranks.

18. Their families shall, in like manner, be entitled to all the allowances granted by Our Warrant of 15th June, 1855, to the families of combatant Officers holding the same relative ranks.

19. Veterinary Officers shall be held entitled to the same honours as other Officers of Our Army, of equal relative rank. This does not, however, extend to the compliments to be paid by garrison or regimental guards, as laid down in the Regulations of Our Army.

Given at Our Court of St. James this first day of July, 1859, in the twenty-third Year of Our Reign.

By Her Majesty's Command.

SIDNEY HERBERT.

PROPOSED TABLET TO THE MEMORY OF THE LATE CHARLES
HENDERSON, M.R.C.V.S. AND V.S.E.I.C., IN THE CHURCH
OF SAHARUNPORE.

WITH feelings of gratification, not unmixed, however, with sincere regret at the loss sustained, we give insertion to the communication received from Lieut. McDougall, announcing the proposition to place a mural tablet in the church at Saharunpore, to the memory of the late Mr. Charles Henderson.

Such a manifestation of respect, from his officers and friends in India, must tend to lessen the sorrow felt by his relatives and friends in this country, and it is one we feel a high degree of satisfaction in recording.

We remember Mr. Henderson as a student well. Although of a lively disposition, he was ever attentive to his studies, gentlemanly in his demeanour, and respectful to his teachers; thus he ensured their good opinion and best wishes for his prosperity in life. Alas! how short a period was he permitted to enjoy it. The bark was launched, but its sails were scarcely trimmed ere a storm arose, and it sunk engulfed in the ocean of eternity. Mr. Henderson had gone out to India in his professional capacity, became invalided there, as is too commonly the case, and was returning home with a hope of recruiting his health, but died on board the ship.

We infer from the letter received by us, that by his friends in India *alone* will the expenses connected with the erection of the tablet be defrayed; otherwise we feel assured that many here would have asked to have been allowed to contribute towards it, and thus to join them in giving expression to their feelings towards the deceased.

Thus link after link is broken that binds us to each other; and soon, when our duty here is done, we too—

“Shall haste to our setting, and shall fall
Like a bright exhalation in the evening,
And no man see us more.”

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING, JULY 27, 1859.

PRESENT—The President, Professors Simonds and Morton, Messrs. Silvester, Ernes, Cheeseman, Withers, Mavor, Cartledge, Helmore, and E. Braby.

W. BURLEY, Esq., the President, in the Chair.

The minutes of the last meeting were read and confirmed.

This was the quarterly meeting to receive the reports from the committees, respecting all of which there transpired nothing of any interest. The only report made was that of the Treasurer, and that was considered satisfactory, as it showed a balance in favour of the College of £502 5s. 11d.

It was proposed and seconded that the Treasurer's report be received.

The Secretary's state of health was reported to be much the same as at the last meeting, and that at present no medical report could be given as to the result.

Orders having been signed for the Treasurer to pay the current expenses, the meeting adjourned.

By order of the Council,

E. BRABY, *Hon. Secretary.*

Veterinary Jurisprudence.

COURT OF EXCHEQUER, JULY 9.

(*Sittings at Nisi Prius before the CHIEF BARON and Special Juries.*)

BROWN AND ANOTHER v. CLAPP.

Serjeant Shee and Mr. C. Pollock were for plaintiffs; Mr. Montagu Chambers, Q. C., and Mr. Smith for the defendant.

The plaintiffs, who carried on business as stone merchants at Bank-side, Southwark, sued the defendant, a farrier, who also practises as a veterinary surgeon in the Borough, to recover damages for unskilfulness and negligence in treating a horse of the plaintiff for lameness. The defendant pleaded "Not guilty."

It appeared that the plaintiff had purchased a carthorse some two

years ago for fifty guineas; that in January, 1858, the horse became lame, and was treated for this lameness by the defendant. The horse got somewhat better, but afterwards in June he became thoroughly lame. He remained under the defendant's care from July to October. The plaintiff then sent for a veterinary surgeon, and did not communicate further with the defendant upon the subject of the horse's lameness. It appeared that the later lameness, at least, was caused by a strain of the flexor tendon, behind the knee of the off fore leg. The defendant stated that the first lameness was caused by the horse having picked up a nail, and that he never discovered, and had no means of discovering before June, that the flexor tendon had been strained.

Mr. Field, Mr. Mavor, and several veterinary surgeons, were called on both sides, but they all agreed that the treatment by the defendant after July was correct, and those who were called for the defence only stated that the defendant's treatment from January to June had been wrong, upon the assumption that the defendant knew of the strain during that time. They also concurred that such a strain was incurable.

The case lasted all day.

The jury found a verdict for the defendant.

The *Judge* refused to certify for a special jury.

SHERIFF SMALL DEBT COURT.—GLASGOW.

(*Before Sheriff Morison.*)

M'MASTER *v.* ANDERSON.

This was an action at the instance of John M'Master, Dobbie's Loan, against William Anderson, veterinary surgeon, residing in Glasgow, concluding for £12, being loss, injury, and damage sustained in consequence of the defender having, upon the 25th of August last, broke the back of a horse belonging to the pursuer, which was entrusted to the defender for the purpose of removing a tumour from its shoulder, but which was, through the carelessness and negligence of the defender, thrown violently to the ground, and had its back broken, thereby necessitating its slaughter. The horse was valued at £24.

For the defence it was stated that in order to remove the tumour, it was necessary to throw the horse, which was done in the usual way, and with the greatest care; that after being thrown, the horse struggled, and, his back-bone being diseased, it broke, and in consequence the animal had to be destroyed.

In support of this statement, evidence was led by the defender to show that the horse was thrown with the greatest care, and medical testimony was also adduced to show that, even with the greatest care, such accidents had occurred, and could not be prevented.

The Sheriff assoilzied the defender.

OBITUARY.

DIED, at Chipping Sodbury, on August 8th, 1859, Mr. Isaac Limbrick, M.R.C.V.S., in the 69th year of his age.

Mr. I. Limbrick obtained his diploma July 1st, 1811, and commenced practice in Chipping Sodbury, where he was respected by a large circle of friends.

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OPENING OF THE SESSION AT THE ROYAL
VETERINARY COLLEGE.

INAUGURAL ADDRESS, BY PROFESSOR SIMONDS.

GENTLEMEN,—By our assembling here to-day we are forcibly reminded that another year of life's existence has passed into the bosom of eternity. The wheel of time has again completed its annual rotation, and the hand on the dial-plate indicates that the period has arrived when we are to resume the active duties of our station, and confront the obstacles that oppose the progress of our profession. The session we this day inaugurate will, ere long, be numbered with the past, and, like those which have preceded it, carry with it, we fear, too many evidences of good intentions being unperformed, and right resolves being unfulfilled. Let us, however, each in our sphere, endeavour to be faithful in every trust, and diligent in the performance of every duty, so that when we look back upon our course we may see few things which ought to have been done, and fewer still which ought *not* to have been done.

For the first time in the history of this Institution we commence our scholastic instructions simultaneously with the medical schools, and this day finds crowds of anxious inquirers after knowledge thronging the benches of the lecture rooms of this great metropolis, listening to the eloquence of philosophy, or the more sedate counsel of experience. Happily we can say that not only are our own benches not vacated, but on the contrary being filled to repletion, we have thereby a firm assurance that a deep interest also pervades the community on the progress of the science we profess. Besides veterans in the practice of our art, and aspirants to its honours, I see around me many kind and personal friends as well as others, and I desire to thank one and all, in my own name and in the name of my colleagues, for the honour they

have done us as teachers of the science of veterinary medicine by their attendance here to-day. The apathy which we are sometimes inclined to believe has an existence among the general public in all which relates to our calling, is thus in a great measure disproved. Such kindness cannot, therefore, fail to stimulate our exertions, and to support us in the trying difficulties which are of necessity associated with our responsibilities, and as such it has our warmest thanks.

This earlier commencement of our labours has in it many advantages, and especially will it allow of a fuller elucidation of the details of pathology at the close of the session, besides affording increased facilities for deeper anatomical research; things of the first import for the success of the students.

As a profession we must be content to follow in the wake of human medicine, "*Ars veterinaria post medicinam secunda est*," was the remark of an ancient writer, whose works, however, show how deeply he was impressed with the importance of the art, and how strenuously he laboured for its advancement. Shall it be said that we are less ardent in the cause of science, and less diligent in the use of means to elevate the veterinary profession, than was Vegetius, of whom I speak, and who lived fifteen centuries ago? Surely not, but rather let us give proof to the world, that if our art in its practical utility to the requirements of man stands second to human medicine, that as an abstract science it is fully equal, and as such deserves a like support.

On occasions like the present, custom has wisely ordered that the chief objects of the lecturer shall be to bring before the pupils an outline of their studies, show them the facilities which exist for the obtainment of information, and offer them some words of advice and friendly counsel; and as it is not my intention to depart very widely from this course, so I must ask the kind indulgence of the senior and non-professional portion of my audience to bear with me in my exposition. It cannot fail to be remarked that I have laid stress on the *science* of veterinary medicine, rather than on its practice. Science may be regarded as "knowledge reduced to a system." In its extended sense it has sometimes been defined as "man's conception of God's universe," hence its possessor is enabled to successfully grapple with difficulties, and to surmount obstacles to which others must succumb. The scientific veterinary surgeon is as superior to the man of mere routine and practice, as he is who studies the starry firmament, with a knowledge of the movements of those heavenly orbs, compared with him who looks upon

them only as a thing which is. By this remark I am forcibly reminded of the eloquent address which has just been delivered at the meeting of the "BRITISH ASSOCIATION," by his Royal Highness the Prince Consort. Speaking of science, the Prince observes :

"To me science, in its most general and comprehensive acceptation, means the knowledge of what I know, the consciousness of human knowledge. Hence to know is the object of all science ; and all special knowledge, if brought to our consciousness in its separate distinctiveness from, and yet in its recognised relation to the totality of our knowledge, is scientific knowledge. We require, then, for science—that is to say, for the acquisition of scientific knowledge—those two activities of our mind which are necessary for the acquisition of any knowledge—analysis and synthesis ; the first, to dissect and reduce into its component parts the object to be investigated, and to render an accurate account to ourselves of the nature and qualities of these parts by observation ; the second, to recompose the observed and understood parts into a unity in our consciousness, exactly answering to the object of our investigation. The labours of the man of science are, therefore, at once the most humble and the loftiest which man can undertake. He only does what every little child does from its first awakening into life, and must do every moment of its existence ; and yet he aims at the gradual approximation to Divine truth itself. If, then, there exists no difference between the work of the man of science and that of the merest child, what constitutes the distinction ? Merely the conscious self-determination. The child observes what accident brings before it, and unconsciously forms its notion of it ; the so-called practical man observes what his special work forces upon him, and he forms his notions upon it with reference to this particular work. The man of science observes what he intends to observe, and knows why he intends it. The value which the peculiar object has in his eyes is not determined by accident, nor by an external cause, such as the mere connexion with work to be performed, but by the place which he knows this object to hold in the general universe of knowledge by the relation which it bears to other parts of that general knowledge. To arrange and classify that universe of knowledge becomes, therefore, the first, and perhaps the most important, object and duty of science. It is only when brought into a system, by separating the incongruous, and combining those elements in which we have been enabled to discover the internal connexion which the Almighty has implanted in them, that we can hope to grapple

with the boundlessness of His creation, and with the laws which govern both mind and matter.”

It would be folly for me to attempt to add, by any feeble words of mine, to this eloquent definition of *general* science, or to the means by which it is to be acquired; but ours is a *particular* science, and as such it requires some especial elucidation at my hands. Until the foundation of this institution, the science of veterinary medicine remained a hidden treasure, at least in this country; but on the continent, diligent explorers at this mine of wealth were already at work. As a matter of history, it is well known that as early as 1761 France set Europe the notable example of improving the condition of the veterinary art, by founding a school at Lyons. This was soon followed by the establishment of similar institutions at Alfort, near Paris, and by others in the leading capitals of Europe. It is not, however, my intention to go into the particulars of the founding of these institutions, nor even of our own, except to remind my hearers that, as a profession, we yet fall short of the allotted period of the life of man, being scarcely seventy years of age, and, consequently, that the advancement of the science of veterinary medicine has to be measured by the fewness rather than by the number of its years of existence. The establishment of the college found ignorance and self-sufficiency the sanitary guardians of the thousands upon thousands of England's domesticated animals, and even now it cannot be said that their hold is entirely destroyed. Nor is this less true of the continental states. Circumstances have required that I should become familiar with veterinary medicine as practised in a considerable portion of Europe, and suffice to say, that everywhere I have found the worst kind of empiricism to prevail. The quack, in all places and under all circumstances, builds his claim on the same foundation—*great practice and experience, and the possession of invaluable receipts*. He repudiates “knowledge reduced to a system,” and brands its possessor as a visionary theorist.

Thus, gentlemen, you see the battle of life which lies before you, for these evils have still to be surmounted. Success depends entirely upon yourselves, and it will be in proportion as you have “the knowledge of what you know.”

Do not, however, misunderstand me; it is not that, as veterinary surgeons, you are to be purely scientific men, but scientific practitioners. The useful, so to speak, must be blended with the ornamental. The very nature of our calling requires that we should be eminently practical in all we do. You will frequently be judged of by the amount

of practical tact you show in the management of animals; but confidence in your opinion and in your treatment of disease will, nevertheless, be in proportion to the amount of scientific knowledge you prove yourselves to be in possession of.

I come now to *the nature and extent of your studies*. It is the "*freshmen*" who require principally to be told that these are manifold; that they embrace no less than an investigation of the structure of each domesticated animal, the uses of the several parts of the organism, the changes to which these are exposed by diverted action, the means by which this is to be subdued, the history of the agents employed, together with their composition, properties, effects, legitimate doses, &c. Besides these, all of you will have to make yourselves masters of the principles of surgery, and the method of performing operations, as well as with the several collateral branches of science, hereafter to be alluded to, and which have a greater or less bearing on the principal object of your study.

Anatomy is truly said to form the basis of the fabric which has to be reared. Without this foundation to rest upon, the whole superstructure of medical knowledge is in danger of falling to pieces. It is impossible to speak too forcibly of the importance of anatomy, and of the necessity which exists for you to devote a considerable portion of your time to its investigation. It is in the dissecting-room alone where such knowledge can be rightly obtained, and the facilities which are afforded in this respect to the veterinary student contrast strongly with the difficulties which beset the progress of the student of human medicine. Our subjects are comparatively of trifling value, easily obtained, and can likewise be brought to the table with their organism unchanged by the inroads of disease or by natural death. These privileges are, however, not to be abused. No justification can be found for the wanton or unnecessary taking away of life. Ever should it be remembered that life, in whatever form it is met with, whether in lordly man—the highest of earth's created beings—or in the tiniest monad that sports in a drop of water, as in a boundless ocean, is the gift of God, and as such deserves our reverence and praise, as also our protection. True it is, that in taking the life of an animal we take but animal-life, and that no soul is thereby hurried into the presence of Deity; still, for the reasons before advanced, unnecessary sacrifice must not be made. I am induced to allude the more particularly to this, because I have seen great waste in the dissecting-room, and many a subject removed while yet useful for important purposes. Another reason also remains to be stated,

namely, that sufficient care is frequently not exercised in the dissections; parts are literally cut up and destroyed instead of being properly separated, the one from the other, for further study; and when inquiry has been instituted into this, the cause assigned has been the readiness with which subjects can be procured. We look for improvement in respect to these things, and hope to find, throughout the present session, that both old and new pupils will vie with each other in the neatness of their dissections, and in the amount of knowledge which is to be obtained from the parts they already possess.

Information, such as can only be acquired in the dissecting-room, will also demand silence and decorum to be strictly maintained, notwithstanding the observance of these cannot be enforced on the same high principle as in the schools of human anatomy. If we cannot say that a reverential awe ought to be inspired by the thought that we are walking among the dead, or in the eloquent language of Bowman remind the student, "that the dead body on which he operates had once been tenanted by the soul of man, that in all probability the Divine Spirit had once deigned his presence there, and, finally, that its scattered elements are destined to be one day reconstructed, and in a changed and purified state of incorruption to resume their mysterious but essential part in the life of an immortal being," surely we can require that the veterinary student shall not disgrace himself by practical jokes and levity of manner when engaged in analogous investigations.

Anatomy, by common consent, is divided into two branches—*general* and *descriptive*. The former reveals the structure and physical nature of the various tissues of each organ of the body, whether it be bone, muscle, nerve, tendon, or by whatever name it is called; while the latter shows the size, form, and position of every part, and the relative connexion each has with the other. Organization is thus made plain to the senses. The whole frame is seen to be fitly and aptly put together, everywhere giving evidence of the wisdom and design of the great Creator, in whom "we live, and move, and have our being."

The most profound anatomist, however, as such, would know but little of the uses of the several component parts of the body. For example, the structure of the liver does not reveal to him that it is destined to form bile, any more than that of the kidney does, that it has to secrete urine. The science which enfolds these mysteries is physiology, and it therefore constitutes an important element of your studies.

Physiology has to do with a *living organism*, and to a great extent it must therefore be learned from the writings of our best authors, conjoined with the expositions of your teachers. It is, perhaps, the most inviting of all sciences; for, while some of its laws are fixed and certain and easy of comprehension, others allow of the greatest range of the human intellect for their solution. General or minute anatomy, physiology, and organic chemistry are so intimately united and blended together, that the one cannot be thoroughly investigated without the aid of the other.

So much of what we may be permitted to call commonplace physiology, it is right that you should become *early* acquainted with; but you must be careful to avoid the study of the abstruse points of the science until you have made considerable progress in anatomy and general chemistry. For instance, all should know at once that it is the office of the stomach to digest the food—of the liver to form the bile—of the heart and vessels to circulate the blood—of the lungs to support the breathing—and, indeed, be familiar with the ordinary functions of every portion of the frame: but the way in which these several offices are performed, and the part that life or organic chemistry takes in their production, must be left for future study.

Sufficient has already been said to show to you that chemistry is indispensable as another of the sciences for your investigation. Nothing has done so much for the improvement of the modern veterinary surgeon as his knowledge of chemistry. Without it, he was yet ignorant of many of the functions of the body in health—of the changes wrought by disease—of the means to satisfy himself that death arose from natural causes—of the composition, properties, and even doses of the agents he employed; in fine, deprived of this knowledge, he could not be considered either a profound physiologist or a safe and sure pathologist. A study of this kind and importance will of necessity make a great demand on your time; but if this is rightly economized, it need not to interfere with your other duties. The truths of chemistry are so captivating, its phenomena so striking and beautiful, and its results so important, that the danger often is that pupils will be eager to dive into its subtilities before they are proficient in its elements. You require, then, the same caution here as has just been given with reference to your study of physiology.

Connected with chemistry, as collateral branches, are *materia medica* and therapeutics—sciences which treat of the agents and the manner of employing them in the treatment

of disease—and which in due course must also have their proper share of attention.

Botany, although not yet taught in this Institution, is no less an essential part of the education of the veterinary surgeon. The views of my colleagues and myself have been so frequently expressed with regard to this subject, and enforced by such a multiplicity of arguments, that it has become almost a work of supererogation to again refer to it. Professor Headland has truly observed that “the importance of this science, as an addition to the curriculum of *general* education, is at present very universally admitted. Even for a man who is altogether uninterested in the pursuit of medicine, it is certainly not a thing to be proud of, that, while well informed in other points, he should be totally unacquainted with the names, and as totally ignorant of the properties of the common herbs that flourish in our fields and hedgerows. For the tourist, the emigrant, the agriculturist, the country gentleman, some knowledge of botany may be said to be almost indispensable; whereas, to the student of medicine an acquaintance with this science is of still more immediate importance. It teaches him to distinguish by their outward characters the vegetable products that constitute so large a portion of our *materia medica*; it enables him to select with certainty from among our native plants those which are poisonous, those which are medicinal, and those which are useful as food.” The want of instruction on this science within these walls ought not, however, to deter you from its pursuit; for, placed, as most of you are, in the rural districts, during several of the summer months, you can do much to supply this defect. With a book or two on the elements of botany, and a careful selection of plants as they successively put forth their flowers, you will soon master the rudiments of the science. Remember that in every science there is an alphabet to be learned, and to be learned thoroughly before any advance can be made. This once acquired, further reading and research will soon perfect that which was so well begun. There is no kind of study which you could pursue in the intervals between the courses of lectures delivered here, which is more exhilarating and healthful; while, as has been truly said, “the objects themselves are among the most beautiful in creation.” Do not fall into the too common error of supposing that your teachers are *alone* responsible for your professional acquirements. You must be fellow-workers with them in depositing the seed, or you cannot expect to reap the fruits of the harvest. A knowledge of the *necessity* of a thing on our parts is a totally different

matter from a knowledge of the thing itself; and hence, as teachers, we one and all feel our deficiency with respect to the details of the science of botany to be too great to presume to offer instructions thereon. An alteration of the curriculum of study can alone effect this, and such necessarily involves other changes, some of which are not certainly desirable; at least in the present state of our institution.

I pass on to speak of pathology, the science which embraces the nature, causes, and effects of disease, and to which it may be said all the other branches of medicine converge. In studying pathology we note the phenomena that the functions of the body present when diverted from their usual course by the intervention of disturbing causes, and examine the alterations of structure which accompany such deviations from the correct standard. From the ever-varying causes of disease, pathology may be said to be constantly being learned, but never fully acquired; and hence the value of experience, which time alone can give, in deciding on the nature of doubtful or difficult cases. The steps by which you are to begin the ascent to this temple of fame are securely laid, and none other will serve to conduct you safely thither.

The sciences which have been named are indispensable aids for you to become veterinary surgeons. It is true that in studying them you are not to be anatomists, physiologists, or chemists, simply as such; but, to be what you desire to be, you must first be all these in degree. "Without a scientific knowledge of the principles and laws which preside over the natural operations of the living body, you cannot be said to understand, even vaguely, the nature of the derangements of disease; and without a scientific insight into morbid conditions it will be impossible to adapt your treatment skilfully to the varieties which they manifest, or to be other than the slaves of empirical rules, blindly applying the same remedies under circumstances wholly different, and constantly at a loss when new phenomena unexpectedly present themselves."* You need scarcely to be told that your success in after-life will mainly depend on the practical results that arise from your skill in the treatment of disease. Reason, as one of the mental faculties, should guide your proceedings; for all these rightly cultivated tend to perfection. It is instinct alone which never changes. Birds build their nests and bees their cells now, as they did when they were created; but reason, at however great disadvantage from the influence of custom and prejudice, is a principle of

* Bowman's 'Introductory Lecture,' 1851.

change, and if you appeal with confidence to it, your appeal must ultimately succeed. Next to the daily watching of cases of disease, noting the progress, change, or alleviation of the symptoms, nothing will tend so much to the advancement of your knowledge of pathology as the making of *post-mortem* examinations. This, which is designated pathological anatomy, unveils things which had been shrouded in mystery, and brings to the clear light of vision that which had previously been only obscurely discerned. Pathological anatomy, in reality, holds in relation to disease the same connexion as normal anatomy does to the understanding of the structure of the body. As veterinary surgeons, we here stand on vantage ground. Few objections are ever made to our autopsies; nay, they are not unfrequently insisted upon to test the value of the diagnosis; for there are no kind friends to consult, whose grief is poignant at the loss they have sustained, nor are our humane feelings wounded by the surgeon's knife laying bare the internal organs of the body.

The knowledge thus gained becomes indelibly fixed upon the mind; and the more it is reflected upon, in relation to the symptoms, the more valuable it becomes. As a future guide and counsellor, it is often of the utmost worth; for it will guard you in great measure against the temptation of expressing too freely an opinion at first sight of the nature of a disease. *Post-mortem* examinations are by some too much neglected, being instituted only in rare and unusual cases. This is an error akin to that of watching such cases only, and disregarding the information which is to be obtained from the more common forms of disease. "Every case, indeed, if well observed, will yield instruction—this for its rarity, that for its frequency."

From these remarks it will be inferred that pathology, to some extent, admits of a division into two parts—the one including special or particular affections, the other general or common ones.

Special affections are not, however, to be viewed altogether as rarities. On the contrary, they are frequently the most common, as well as the widest-spread, maladies with which we have to deal. The rapidity of their attack, and the extent of their existence, often excite our liveliest attention, while the fatality that marks their progress causes our deepest anxiety. This is especially the case both with epizootic and enzootic affections—a fact which reminds me of the propriety of saying a few words upon some of the diseases which have prevailed among our domesticated animals during the past year.

The influence of a continuous hot or cold temperature, a

moist or dry atmosphere, or of a very variable condition of the weather, in the production of prevailing diseases, is a circumstance far too lightly thought of by many practitioners. Not only in some seasons, but likewise at particular periods of the year, certain diseases are so frequently occurring as to call forth remarks even from the least observant. That many of the maladies of domesticated animals are dependant on the locality and soil they inhabit, as well as on the quantity and quality of their provender, all practitioners are ready to admit; but the immediate, as well as the ultimate, influence of the weather, in mitigating or increasing the effects of these local causes, is often too little regarded by them.

For upwards of a year the fall of rain throughout the greater part of England has been remarkably small; so much so, that many agriculturists experienced the greatest difficulty in procuring a sufficiency of water, both last summer and this, for their cattle, while that which was obtained was often of the worst kind possible for the maintenance of health, being charged with vegetable matters in a state of decay. From the same cause, also, the pasture lands at the latter part of the summer of last year were so scorched, that they yielded a very insufficient supply of herbage. The immediate result of this state of things was a great fall in the condition of cattle and sheep, which ill adapted them to withstand the privations and chilling blasts of winter; and the *ultimate* result the loss of hundreds of sheep during the winter, although the weather remained dry, and as such, according to ordinary experience, well suited for these animals. *Post-mortem* examinations showed an emaciated state of the body, accompanied with local congestions, particularly of the lungs, as the direct cause of death.

Next to sheep, young cattle suffered the most, the major part dying from diarrhœa, running on to dysentery. It is also worthy of note that in numerous cases, where persons by too generous feeding with oil-cake, mangel-wurzel, &c., attempted quickly to restore the loss of condition of their young stock, the animals fell a sacrifice to attacks of *hæmato-sepsis*, commonly called black quarter, or quarter garget, from a gangrenous condition of a considerable part of the body, due to a septic state of the blood.

The past summer also has been remarkable both for its heat and dryness. The *Observer* newspaper of the third week in July, alluding to the subject, says that—

“For the last forty-six years it has not been so hot in the metropolis as during the last fortnight. All at once we seem to have passed into a tropical climate. For two or three

days there has been experienced a temperature equal to that of India. Several persons have been prostrated with sun-stroke, and perished during the week, and among others two poor little children, left in a perambulator by a careless nurse-girl in the sun. To follow the ordinary avocations of life has been a most weary and irksome task; men, women, and children seemed almost to gasp for breath. In the House of Commons, especially in the committee-rooms, which face the river, the temperature was something frightful, as every crevice through which air could be admitted was stopped up, in order to exclude the pestilential odour of the Thames. In one of the courts of law the presiding judge could endure the heat no longer; he dashed his wig from his head, and invited the members of the bar to follow suit. In the country the effect of the high temperature has been most marvellous. The crops, which ten days ago were quite green, are now ready for the sickle; in fact, in many parts harvesting is in full operation. The most serious results of the hot weather, however, are to be found in the greatly increased rate of mortality, especially in the metropolis, during the week ending the 16th instant. The deaths in that week amounted to 1,400; in the three previous weeks they had been respectively 970, 1,024, and 1,226. The average rate of mortality during the past ten years in the corresponding week was 1,100. The comparison, therefore, gives a most unfavorable result, as it shows that the deaths in the present return are higher by 300 than the number which the average rate of mortality for the second week in July should have produced. Diarrhœa has been unusually fatal."

As was to be expected, animals likewise suffered greatly from the extraordinary elevation of temperature which prevailed, and particularly those depastured in exposed situations, where little protection could be afforded by shade. Many cases of sudden death occurred; the *post-mortem* examinations showing the vessels of the meninges of the brain turgid with blood, and also the cavities of the heart filled to repletion with soft and dark-coloured coagula. The most serious consequences, however, of the long-continued heat are still being experienced in the loss of lambs. For many weeks these animals have been dying by scores, especially in several of the eastern counties, so as to threaten, in some instances, the loss of the whole flock. Their death is usually preceded by wasting, an ill-conditioned state of the wool, irregular bowels, fastidious appetite, pallid membranes, and husky cough. They thus gradually "pine away," to use an agricultural expression; no ordinary treatment sufficing to arrest the

fatal result. On examination, death, in the greater number of instances, is found to depend on structural changes of the pulmonary tissues, and sometimes of the liver. The edges of the lungs, in particular, are consolidated, impervious to air, and often infiltrated with a purulent fluid, seemingly caused by passive congestion, leading to effusion and slow degeneracy of the *liquor sanguinis*, as results of the exhausting influence of the long-continued heat. Besides this cause of death, great numbers of lambs are likewise being lost from the presence of *filariæ*, hair-like worms, in the *abomasum*—the true digestive stomach. The animals present analogous symptoms to those whose lungs are organically diseased; and as such, the cause being overlooked, we are often told that nothing can be discovered to account for death. I do not now stop to go into further particulars of these cases of worms within the stomach, because in the present state of science we cannot satisfactorily trace their connexion with either a paucity of rain or an elevated temperature. There are, however, two remarkable instances of the destruction of animals depending upon the latter cause, which have recently appeared in the pages of the *Veterinarian*. (See pages 509 *et seq*).

I must here leave this part of my subject, although numerous other proofs could be adduced of the ill effects produced on animal life by the extreme drought and heat of the weather.

Mention has already been made of the great fatality of lambs, at present, arising from entozoa, of the thread-like variety of worms being located within the abomasum. Our attention was first directed to this interesting pathological fact last year, in consequence of the serious losses which were being sustained by an eminent agriculturist, who prides himself upon the purity of the breed of his sheep, and the care bestowed on their feeding and management. Notwithstanding the best-directed efforts, his lambs were gradually falling away in condition, and ultimately dying as if from starvation. They had gone on well up to the time of their being about three to four months old, when they were observed to cease growing, and to have an unhealthy appearance of the wool. Their appetites, however, remained good, and the evacuations were for the most part healthy; nor were there any other observable indications of disease, beyond the gradual wasting away of the soft tissues of the body, accompanied in some few instances with diarrhœa towards the close of life. Several *post-mortem* examinations, undertaken chiefly by himself, failed to throw any light on the affection, and hence our opinion was sought. On inspecting the animals on the

farm, examining their provender, and learning the history of their management, I could gather scarcely any further insight into the cause or nature of the malady, and under these circumstances one of the lambs was killed for my examination. The body was greatly emaciated, the flesh pallid, and the vessels nearly bloodless; but there was no organic lesion of any of the viscera of either the thorax or abdomen to account for these phenomena. Attention was then directed to the internal condition of the digestive organs; and on laying open the *abomasum* I was surprised to find its mucous membrane so thickly studded with minute worms, about half-an-inch in length, that hundreds might be said to occupy but a few square inches. Here was at once a satisfactory solution of the pathological problem. These parasites by their number had drained the system of blood, and thus anæmiated and killed the animals. They were so firmly fixed by the insertion of their heads and necks into the membrane that some little force was required for their removal—a circumstance which led to my subsequent examination of them by the microscope. This revealed the singular fact, that a little posterior to their heads the integumental covering was elevated into the form of barbs, with the points directed backwards, thus enabling the creatures to effectually retain their hold of the membrane, despite the peristaltic action of the viscus, and the mechanical attrition of the ingesta against them. A parallel of this adaptation of means to an end is found in the larvæ of the *Æstrus Equi*, which is well known to attach itself to the lining membrane of the stomach of the horse by its hooklets, and thus remain for months securely anchored, as it were, to the place of its habitation. Another circumstance worthy of passing remark, especially to the junior students, is that by the location of these creatures within the stomach, we have a beautiful proof of the power of life in resisting the solvent action of the gastric juice. I must not, however, on an occasion like the present, dwell on an inviting theme of this kind, but hasten to speak of other diseases which have prevailed during the same period of time.

With reference to the horse—the animal which many regard as the only one worthy of the veterinary surgeon's care, and who, having their way, would thus “crib, cabin, and confine” the education of the student to the standard of by-gone days in the history of our profession—I believe he has been pretty well exempt from any special disease. During the early part of the spring, the so-called influenza prevailed in London and its vicinity, and also in several parts of the country, but it did not assume a severe form, nor extend

over any great breadth of our island. The disease partook rather of a bilious character than a pulmonic one, and as such it yielded more readily to remedial measures.

As a general rule we see fewer attacks of epizootic maladies among horses than among cattle and sheep, and this would appear to be the case in other countries as well as in our own. Whether any change by the more immediate application of hygienic principles, in these latter days, for the preservation of the health of the horse, has been wrought in this respect, would be more difficult to decide than may appear at first sight; but, be this as it may, many ancient writers dwell particularly on these affections.

To the early poets of Greece and Rome we are especially indebted for accounts of some of them, frequent allusions being made to such maladies in the writings of Homer, who flourished about 900 years before the Christian era. Alluring as it is to follow the flights of a poetic genius in his powerful narrations of such sad events, we must still receive them with some degree of caution, as truth too often is sacrificed to the poet's vivid ideas and figurative imagery.

Virgil and Ovid are among the poets of Rome whose graphic descriptions of these diseases are preserved to us. Did time permit, examples from the writings of each might be given, but I shall content myself by quoting the well-known lines of Virgil, when describing one of these epizootics as it raged among the Alps, probably not less than 2000 years ago.

“Here from the vicious air and sickly skies,
A plague did on the dumb creation rise :
During the autumnal heats the infection grew ;
Tame cattle, and the beasts of nature slew.

* * * * *

The steer, who to the yoke was made to bow,
(Studios of tillage and the crooked plough)
Falls down and dies; and, dying, spews a flood
Of foamy madness, mixed with clotted blood.

* * * * *

Tisiphone, let loose from under ground,
Majestically pale, now treads the round.

* * * * *

The rivers and the banks and hills around
With lowings and with dying bleats resound.
At length she strikes an universal blow;
To death at once whole herds of cattle go—
Sheep, oxen, horses, fall; and heaped on high,
The diff’ring species in confusion lie.”

Here we must leave this subject, for we cannot at this distant date undertake to decide whether this destruction of

horses, as described by the Mantuan poet, in common with cattle and sheep, depended or not on the same affection. We know of no such disease in the present day, although the victims to epizootics are both numerous and various. Eczema, which attacks the greatest variety of domesticated animals, and even the gallinaceous tribe of birds, is never met with in the horse; nor is the pleuro-pneumonia of cattle or the variola of sheep capable of being communicated to him.

Mention has just been made of epizootic eczema, which reminds me that this disease has been more rife during the past year than for many previous ones. It has, however, assumed rather the endemic form than otherwise, and hence been confined to localities where secondary causes were in full operation to favour the outbreak. In and around London hundreds of cattle, sheep, and pigs were at one time the subjects of the malady, and to such an extent did it prevail, that for many weeks the animals which were sent from the metropolitan market into the lairs, to wait the next market day, were almost certain to be attacked by the disease in the interim. Much solicitude was likewise felt, for fear of its extension among the cattle which were brought together at the annual meeting of the Smithfield Club, in consequence of its appearance among them. Comparatively speaking, however, only a few cases occurred, the escape of many of the animals probably depended upon a prior attack of the malady, and others upon a state of organism insusceptible at that particular period to the affection. Secondary causes are often too little regarded in these outbreaks, which arises, in part, from their great variety. It is when a disease of this kind shows itself in its sporadic form that we can study the secondary causes to advantage. Several such instances have come under my observation. I will mention, however, but two, as having very recently occurred. In the first, a valuable herd of Shorthorn cows were attacked with this disease in consequence of being compelled to drink at a stream whose waters were contaminated by the refuse animal matters coming from some kennels. In this case the affection assumed a malignant type, and several of the animals died, but it did not extend to the other cattle on the farm, although placed at a very short distance from the infected, as they had a continuous supply of pure water. In the second instance the outbreak took place among some pigs which were being fed on the blood and other products of a slaughter-house; and as these animals were located in a yard with some oxen, the malady within a few days had extended to them, but did not go beyond the precincts of the premises. These examples will

suffice to show you how important a branch of your studies is an investigation of the causes which regulate the spread of affections of this class.

With regard to pleuro-pneumonia, suffice to say that it also has existed in the sporadic form, with but little mitigation, however, either in its severity or fatality. This malady appears to prevail to a greater or less extent in both hemispheres of our globe, and everywhere to be attended with the same destruction to life. Accounts of its ravages from time to time reach us from the distant parts of America, the West India Islands, the Cape, and even India. So far as we yet know, it has not, however, visited Australia; but it is to be remembered that, until 1841, the British Islands were likewise free from the disease. Whether it had had a previous existence here is a matter of doubt; for, as I have elsewhere stated, an account given by a Dr. Barker, in 1745, of a destructive malady which then prevailed among the cattle, agrees in a remarkable manner both in its symptoms and *post-mortem* appearances with pleuro-pneumonia. The pathology of this affection shows that it must ever hold a place among the most fatal ones; and hence the deep-rooted anxiety which the agriculturist feels respecting its occurrence in his herd. Hence also the encouragement that is held out for the empiric to practise his frauds upon a too-confiding public.

Before leaving this subject, I would further observe that a knowledge of epizootics is indispensable to your success as veterinary surgeons, however little you may be enabled to do to arrest their progress, or mitigate their effects. It is to this class of diseases that the principles of hygiene more especially apply, for it is equally your duty to diligently seek out the causes of disease with a view of their removal, as to alleviate suffering wherever it is met with. Humanity also here makes its claims upon you. We do not, I fear, as a profession, sufficiently endeavour to promote the comforts and the well-being of the animals committed to our care. We often neglect to point out how their dwellings might be improved, and their health promoted, by a better system of ventilation, and of feeding and management. We are too careless of these things from the force of habit or of custom. As veterinary surgeons, we should recoil at the unnecessary infliction of pain, and loudly condemn any barbarity of practice; but still we pass by things, without note or comment, by which disease and death are hourly promoted. We want improvement here.

Instruction in the science of medicine in this country has been so long united with the inculcation of the principles of

humanity, that no voice is necessary to be raised in its behalf. We feel that man holds but a delegated power over the lower animals, which he cannot violate with impunity. We repudiate the necessity of vivisections in the advanced state of science, and we condemn as unnecessary the performance of experiments to determine again that which had been determined fifty times before ; for we believe with Dr. Crampton that "it is a painful and humiliating truth, that the human mind, by being familiarized with scenes of cruelty and horror, may be brought at length to extract from them a kind of insane gratification, which, like other perverted passions, extinguishes all the finer and better sympathies of our nature." And further, "that the public exhibition of torturing experiments on animals exercises a corrupting influence on the minds of those who witness them, and ought not to be tolerated." Cultivate, then, this higher principle of your nature ; for, you may rest assured, that while it promotes your own happiness, it will at the same time tend to raise you in the estimation of every right-thinking individual, whose good opinion you are wishful to obtain.

Having now glanced at several of the subjects which are contained in the curriculum of your studies, I proceed to make a few observations on *the means which are afforded you for their acquirement.*

The imparting of information by the delivery of lectures has long taken precedence of all other methods of instruction in science. It is the most pleasing and inviting, as also the most ready means of impressing the mind with the truths it has to acquire. Like all other good things, it has, however, its alloy ; too much dependence is often placed upon the teacher by the pupils, who, in their turn, will thus become indolent in seeking further knowledge by reading and investigation. While, therefore, it is the province of the teacher, in his inculcation of principles, to seize upon the rallying points of his subject, to separate the valuable from the useless ; it is no less the duty of the student to make the matter his own, and by subsequent research to complete his knowledge respecting it. In this way alone can your minds be stored with information, which is hereafter to be applied to your own benefit and to the advantage of those you are looking to for support. Nor must you omit to be regular in your attendance at the lectures. An occasional absentee differs but little from him who designedly neglects to be present. He has lost, perhaps, it may be, the very thing he was solicitous about ; or he has missed the practical application of principles he had heard previously expounded.

Another great error with some is that of deciding for them-

selves what is important and what is not; and thus they studiously avoid, first one thing, and then another, until they find at last they have made shipwreck of their talents and their time. Talent without industry and perseverance is of little worth. It is the diligent pupil who, early and late, is to be found in his place; who plods on day by day; who receives the inculcations of his teachers in a right spirit, and who has determined to gain the honour he has come to seek—that of being a graduated member of his profession—who will be sure to succeed. It is well that such should know that, in the long run—even if they lack the advantages enjoyed by others, if their mental culture has not been equal, nor their worldly means so great—they will outstrip those who, possessing these things, lack industry and application. Let me, then, entreat one and all of you to persevere, to impose activity upon yourselves as a positive rule and duty, to be punctual and regular in your attendance, and to allow nothing to induce you to give up even a single lecture.

After the observations which were made in a former part of this address, it is almost unnecessary to say that the lectures delivered here by the several professors embrace the anatomy, physiology, and pathology of the horse and other domesticated animals; chemistry, materia medica, and therapeutics; veterinary jurisprudence, and the principles of surgery. The names of the principal of the college, Professor Spooner, and of Professor Morton and Assistant-Professor Varnell, as officers of the institution, with whom I have the honour of being associated, are not only as familiar to you as “household words,” but are a sufficient guarantee that your studies will be rightly directed, and full justice done to their respective divisions of veterinary science. It may with truth be said, that they have now spent many years of the better part of their active lives in the service of the profession; and that if they have not reaped any other reward, they have at least this one, that, in proportion to their abilities and powers, so have they continually vied with each other to promote its onward progress. If, then, you possess long-tried and faithful teachers, and it should still be found that you fail to profit thereby, the only inference which can be deduced is, that you have neglected to give heed to their instructions, or to co-operate with them in furthering your professional education.

This brings me to say a word or two upon the facilities which exist for the acquirement of practical anatomy. I would, however, remark, in the first place, that the most erudite descriptions on the part of your teachers, as well as

the most punctual attendance on their demonstrations, will alike fail to make you practical anatomists. This knowledge must be acquired by yourselves, and for yourselves. Early and late must you labour with scalpel in hand and text-book by your side, in disuniting the one from the other of the several component parts of the body, and in studying their mutual relationship and development. Minutiæ of this kind must be mastered, or you can never hope to rise to eminence in your profession. It may be true that you will never have to perform those delicate operations which the human surgeon has, but in the daily routine of practice you will have a far greater necessity for an intimate acquaintance with the details of organization. Scarcely a case of lameness can be brought before you without requiring for its correct diagnosis a knowledge of the several structures of the limb; and in the examination of horses upon purchase, this branch of science is perfectly indispensable. Your teachers have not been unmindful of these things, nor of the assistance which you will require in your dissections. To perfect you, therefore, in this branch of study, and also to stimulate your exertions, prosectors will be selected from among the senior pupils, who, on passing their examinations, will receive certificates of their having filled this office. Besides the daily demonstrations in the theatre, arrangements have likewise been made to fill up the vacancy which had been caused by the retirement of Mr. Corbey, by the appointment of Mr. Good as your future instructor in practical anatomy in the dissecting-room. 'Tis but recently that this gentleman occupied his place among you as a student; and his uniform good conduct, gentlemanly demeanour, and unremitting attention to his studies, at that time, are our assurances that he will faithfully perform the duties which now devolve upon him.

I come now to the means at your disposal for obtaining a knowledge of pathology.

The nature and consequences of the several maladies affecting animals, together with the principles regulating their treatment, medically or surgically, will be inculcated in the lecture-room; but it is in the Infirmary where, in your daily round with your teachers, you must observe the symptoms and watch the progress of each particular affection. The number of patients which are admitted, will afford a fair opportunity of your mastering the details of practice as it occurs in this large metropolis. On the whole, however, the variety will not be so great as is seen in many parts of the country. Your teachers will, however, endeavour to com-

compensate for this, by making clinical observations on the morbid specimens, and the history of cases, which, from time to time, are forwarded from the country by veterinary surgeons, and also by the members of the Royal Agricultural Society, as with this society the College has long co-operated for the improvement of the treatment of diseases of cattle and sheep.

By appointment also of clinical clerks, an additional help is afforded you of studying the phenomena of disease. While performing these duties you will be careful to note the progress of the several cases from day to day, and thus discipline your minds for that reflection on cause and effect which must be the guide of your future practice. You should learn also to make your own diagnosis from what you observe, and see how it accords with the opinion of your teachers, and the remedies that are employed. Experience will soon correct the faults which you may commit, and thus, imperceptibly as it were, you will be laying a solid foundation for your fame as scientific practitioners to rest upon. Now, then, an opportunity will likewise be afforded you of seeing the *post-mortem* appearances of cases which had been treated in the Infirmary. These must receive your especial notice, with a view to compare the lesions that are disclosed, with the several symptoms which existed during life. Let all such investigations be recorded by you for future reference: they possess a value far beyond any you may at first suppose.

The examination of horses for soundness forms a large portion of the practice of the College, and hence its value to you. To it you should give assiduous attention, and note the several causes of unsoundness and the relative importance which is attached to each. Some things, which to you may appear trivial, will be greatly objected by the examiner; while others, on the contrary, which perhaps may seem to you to be serious, will be as lightly thought of by him. Experience alone can give this knowledge, but seeing its results, his experience becomes as it were yours, and is to be used by you for your own advantage.

There is no branch of your profession which will test your acquirements more severely than the examination of horses. Often will you find yourselves in antagonism to those who have passed through the same ordeal, and obtained their professional education from the same source as you have. This is much to be regretted, and the more so, as we see no effectual remedy for the evil. On matters of opinion there will ever be a difference, but on matters of fact there surely ought to be none. Much might be said on a subject like

this, but time forbids it being now little more than glanced at.

To proceed. The next thing to which I direct your notice as a means of obtaining knowledge, is the Veterinary Medical Association. At its weekly meetings, papers are read and discussed, morbid specimens exhibited, and the treatment of diseases criticised. As the Society is based on the mutual instruction system, so, when its debates are rightly conducted, it cannot fail of being everything its founders desired it should be for your improvement. It has been said that "reading makes a full man, writing a correct man, and speaking a ready man;" and as in this Society all these essentials are brought into active exercise, so it must ever hold an important place among the auxiliaries to your studies. You will do well, therefore, to become members of the Society, and by it contribute your portion to the general fund of veterinary knowledge. Connected with the Society is a most valuable library, of both old and modern authors. These works, subject to certain regulations, are circulated among the members, affording them every facility of storing their minds with the general literature of medical science.

Mention may here be made of some of the books which you should consult. Books, however, as has been rightly observed by Dr. Gull, are but secondary aids to knowledge. "They can be read to advantage only after observation, or as helps to it; to trust to them alone, is to spoil the faculty of observation; for we do violence to our intellectual nature, when we take that on faith which should be admitted only on demonstration. Knowledge so acquired, however full and sound and beautiful it may seem, is but as the child's bubble, and will collapse on the least contact with the realities of practice.

Percival's 'Anatomy of the Horse' is the text-book of the dissecting-room. It only treats, however, of descriptive anatomy, and even in some of its details may be found to lack sufficient explicitness for the student of the present day; still, it is to be preferred to any other. For general or structural anatomy Quain and Sharpey's 'Elements' holds a deservedly high position, and should be carefully studied by you on the several tissues and composition of the body. Todd and Bowman's 'Physiological Anatomy' is a work of the same class, and of the highest order. The books exclusively devoted to physiology are now so numerous and meritorious, that it is indeed difficult to make a selection; but in this institution we have been chiefly in the habit of referring to Carpenter's 'Manual,' and also to his more

extended work on the 'Principles of Physiology, General and Comparative;' and likewise to Kirke's and Paget's excellent 'Hand-book of Physiology.'

On chemistry you will study the profound writings of Brand, Bowman, and Fownes in particular; and on Veterinary Materia Medica and Therapeutics, you have the book of all others, Morton's 'Manual of Pharmacy,' a new edition of which (the sixth) will shortly appear. His 'Toxicological Chart,' you will also find to be indispensable in the after-practice of your profession. Headland's 'Action of Medicines' is likewise especially suited for your study. On Surgery and Pathological Anatomy, you should refer, among others, to the writings of Millar, Cooper, and Liston, as also to Paget's 'Surgical Pathology,' and Andral's 'Pathological Anatomy.'

The pathological works relating immediately to veterinary science are so numerous, and of such a diversified character, that time will only allow of my mentioning the names of some of those who have thus done a lasting honour to our profession. Coleman, Percival, Blaine, Youatt, Clark, Turner, Field, and Spooner, are of this number. This list might be greatly extended, and doubtless should be, if merit and literary talent, wherever it is found, had to be brought to your especial notice; but with these names we must rest content for the present. I venture one more remark on this part of my subject, even at the risk of being charged with self-laudation, and that is to recommend to your notice the only journal which exists in this country, entirely devoted to the interests of our science, '*The Veterinarian*.' This work, after having held on for thirty-two years, may be rightly said to be the property of the profession, and to be both in usefulness and intelligence just that which the profession likes to make it. Let us hope that as it further grows in years it will increase in vigour, and be all its long-tried friends desire it should be.

Thus, gentlemen, I have attempted to place before you an outline of the facilities afforded by the College for your instruction. These might have been added to, as well as the subjects themselves have been expounded at greater length, and with far more precision and force, had the delivery of this address been undertaken by either of my colleagues. Quoting the language of one of them, "I could have wished that this honour had been conferred on either of them instead; for they, from 'thoughts that breathe,' would have given you 'words that burn,' and thus profitably have engaged your attention during the current hour."

And now a word on the period of time which must be spent in the acquirement of knowledge, before presenting yourselves for examination in accordance with the regulations of the Royal College of Veterinary Surgeons—two sessions, or, as it may be said, nearly two years. This may seem to some a long time, but you will find it little enough for all the work you have to do, even if each session is honestly devoted to its purpose. Many, alas! fearfully shorten the period by their negligences; and then, by their rejection by the Court of Examiners, they have to reap the fruit of their misspent hours. Let such be the case with none of you.

Some among us who look for change and progress in accordance with the spirit of the times in which we live, have desired that the period of study should be extended, or at least that the pupils who have not enjoyed the advantage of being previously placed with a veterinary surgeon should devote a third session to their studies. This suggestion, simple and consistent as it may seem, cannot as yet be adopted, for it forms but an item of a scheme of great changes, the time for which is not come, and the desirability of which I must leave to others to determine. The union which exists between this institution and the Royal College of Veterinary Surgeons, and which has never been completely severed, although at times greatly endangered by conflicting interests, does not depend on any alterations in the curriculum of your studies. The desire of all appears to be that science, instead of being opposed in her progress by the contending elements of discord, may be allowed to pursue her way amidst the alluring paths of peace, as by this alone all are convinced that her votaries can be advantaged.

I proceed to the last part of my subject—*the encouragements which are held out for perseverance*. Here I must be exceedingly brief, as I am reminded that time passeth by on the wings of the wind. It was rightly observed by Professor Spooner, in his inaugural address of last year, that “you have the *prestige* of your name and fame committed to your own hands.” As a profession, there are few honours to look forward to, beyond the one of a life well spent in the performance of duty. Nor do great riches await you: still, a competency is the sure reward of labour, and a good standing in society a certain consequence of honour and integrity. As an incorporated profession, some of you perchance may rise to be members of its council, vice-presidents, or even president; for there are no barriers here, save such as are created by the members of the body corporate themselves.

The Court of Examiners has also its veterinary section; and surely it is an honour worth seeking—a seat at that board, coupled, as it is sure to be, with the respect and appreciation of some of the most distinguished teachers of the science of medicine. Nor can we, the Officers of this Institution, even if health and prolonged life be granted us, continue many years. Sooner or later, others must take our place, and devote their time and talents to the higher elevation of the profession, by an improved system of education.

The connexion which happily exists between the Royal Agricultural Society and the College has also, among other advantages, opened the way for the appointment of veterinary surgeons, throughout the country, as sanitary inspectors at the meetings of the different local societies. Scarcely an agricultural association of note can be found, that does not recognise the value of our profession in guarding against the transmission of hereditary diseases among domesticated animals, and in preventing the substitution of older for younger animals. The proper performance of these duties is of the first importance to the public at large, as well as to the agricultural community itself. The durability of a society often hinges on the correctness of the opinions given, as well as on the manner in which the entire duties are performed, by its veterinary inspector. Integrity, judgment, and industry, are the prerequisites for appointments such as these.

Another inducement to your perseverance in all which befits a professional man, is to be found in the appointments to regiments of yeomanry cavalry. Recent circumstances, unfortunately, have compelled us to place ourselves in a state of defence, and hence these corps are likely to be soon increased in number throughout the length and breadth of the land. To each of these, as now, will be attached its veterinary surgeon.

The army, however—both the Home and Indian division of it—offers, probably, the greatest of all incentives to your becoming intelligent and well-qualified practitioners, by the encouragement it holds out to those who prove themselves eligible for appointments therein. The honour of securing for veterinary surgeons the rank of commissioned officers is due to the late Professor Coleman, than which nothing tended more to raise the dignity of our art, and to place the stamp of public approbation on our services. Within the last few weeks, a new era has, however, dawned upon the army veterinary surgeon, and which, through him, is reflected upon the whole profession. We hail this with much satisfaction; and we

desire to express our public thanks to the Principal Veterinary Surgeon, Mr. J. Wilkinson, and to all others who have assisted him in his labours. By Royal warrant, an increase of pay and rank has been conferred on the army veterinary surgeon. Elsewhere, in the pages of the *Veterinarian*, you have the details in full of this important measure, which I feel assured will excite the liveliest feelings of interest throughout the profession.

And now, to bring this too long address to a close, lest further words of mine, after the counsel I have given, should fall listless on your ears, I will adopt the soul-stirring language of Bowman, when addressing the students at King's College, and say with him: "Gentlemen,—Think nobly of your profession, and by your conduct make it worthy in your own persons of the standard at which you estimate it. Remember that its end is beneficent, its studies ennobling and elevating, its ministrations an exercise of our best faculties, and in harmony with the whole constitution of our nature. To excel in it is an aim worthy of all your aspirations, of all your energies; but requiring mental and moral discipline—patient and sustained labour. Go forward in this path with diligence; make your difficulties a school, in which the strength of character may be tried and formed, and convert them from adversaries into your best friends. There is no sweeter recollection than the sense of difficulties overcome. Strive rather to shine in yourselves, than to outshine others. Seek less to derive honour from your profession, than to honour your profession by your virtues. Cultivate a love of knowledge for the sake of the benefits it will enable you to dispense, as well as for the gratification of your own higher tastes and capacities; and then, whatever worldly fortune betide, you will win the most valuable of blessings which the occupation of a life can confer—the satisfaction, in the retrospect, of having improved opportunities, of having acted on right principles, of having been the honoured means of benefiting your fellow-creatures, while humbly, yet earnestly, endeavouring, under the Divine blessing, to accomplish the will of your Maker, and to live to His glory."

Communications and Cases.

ON THE APPOINTMENT OF VETERINARY SURGEONS IN THE ARMY.

By W. J. GOODWIN, M.R.C.S. and V.S., Hampton Court.

DEAR SIRS,—In Professor Simonds' introductory address, it is stated that the profession is indebted to the late Professor Coleman for having obtained commissions in the army. Now, the first appointments in the army were made under *warrant* only, and it was not until the late Professor Peall and others applied to the Commander-in-chief that *commissions* were granted. Mr. Coleman *did not forward the application*, and the applicants were not even informed by him of their success until several appointments had been made.

I have often heard Professor Peall and also the late Mr. Richard Lawrence relate the circumstances, and inveigh against the indignity a professional man might have encountered under the warrant, in the shape of corporal punishment.

In the complimentary remarks, towards Principal Veterinary Surgeon, Mr. Wilkinson, for his exertions in the improvement of the condition of the army veterinary surgeon. I wish that the professor could have added, and *for his efforts to obtain that privilege which our corporate body ought to have enjoyed long since*, viz., that army appointments should be obtainable only by members of the Royal College of Veterinary Surgeons. This, sooner or later, with or without his influence, must be the result, and for it we are all anxiously looking.

I am, dear Sirs,

Yours, &c.

To the Editors of 'The Veterinarian.'

CASES OF FRACTURES AND DISLOCATIONS.

By T. HURFORD, M.R.C.V.S., 12th Lancers.

I HAVE just seen in the *Veterinarian* for September a paper from Mr. Henderson, on fracture of the Carpus, which brings to my remembrance a similar case that occurred some

years ago, at Bangalore, when I had the charge of two troops of horse artillery. One morning, while visiting my patients, a grey horse was led in very lame, he having fallen in the riding-school; but, strange to say, there was no mark on the knees—not a hair displaced. On examining the limb there was a peculiarity on feeling the near knee, which led me at once to conclude that a fracture of the bones of the joint existed. I did not, however, at once express this opinion, but contented myself by ordering fomentations to be applied to the part, and a dose of physic to be administered. On my return, which was in about two hours, a second examination completely confirmed my first impression. I applied at once for a committee, and the horse was shot that evening; one of the committee declaring, however, that a fracture of the bones of the knee was an impossibility. I have now forgotten whether two or *three* bones were found to be fractured; but, be this as it may, they were broken into *many* pieces. With this exception, I never heard or read of a case of the kind, until I saw the one related by Mr. Henderson.

As I am writing on the subject of fractures, the following cases will perhaps be interesting to your readers; they are, however, penned from memory.

1. FRACTURE OF CRANIUM.

A troop horse was admitted with a slight wound in the temporal muscle, over the eye. It was not known how it occurred. The wound was perfectly simple, and the horse suffered no apparent inconvenience therefrom. He had a dose of physic given him, and Tinct. Myrrh Comp. was applied to the part. At the end of a few days he was discharged. In the evening, however, of the same day, he was *dragged*, rather than led, back to the sick lines; he, apparently, having had a fit in his stall, and being now half stupified. During the night he fell, and never got up again. No depression could be detected in the site of the wound. Cold bathing to the head was had recourse to, but he died in two or three days. On examination a portion of bone, not larger than a pea, was found to have been driven into the substance of the brain, and to have caused an abscess which contained about half a pint of matter.

2. FRACTURE OF JAW.

I have seen one case of this kind which was produced by a kick. It partly separated the symphysis. By bandages,

&c., I managed to save the horse, but all the incisor-teeth on the fractured side fell out.

3. FRACTURE OF SPINE.

I have seen many cases. One, which was caused solely by muscular contraction, is singular. It happened on the march. Morning stables were over, and the men were going to their tents, when a noise was heard and a horse fell. I saw him directly, and found the spine fractured. The man said the horse was jumping about, and he heard a noise as if the animal had voided wind, which made him look round, when he saw him falling.

4. FRACTURE OF PASTERNS.

I have seen several. They have generally occurred while racing. One occurred to a Cape horse, thorough-bred, the property of Captain Nolan, which had been bought as a stallion, but was allowed to fulfil his engagements. During his last race he fractured the near fore-pastern. I was asked if I could do anything to save him, and I said I would try, but that it was a bad fracture. The race-course was a mile from my sick stables, and he was a very violent horse. I managed, however, to get him home, and had him put in slings. He, at first, knocked about a great deal in the slings, but in the end he got so well that he could walk morning and evening about half a mile to water and back again. As his owner, however, was afraid that the leg would give way on coming down from a mare, he was shot.

5. DISLOCATION OF THE PATELLA.

This is very frequent, and easily reduced, but unfortunately as easily dislocated again. I had a case on the march once, belonging to Colonel Tyler. We were on the banks of the Kistna, which river we had to cross, and did not, therefore, move till daylight. I should mention that the horse had been castrated about five or six days before. He was, however, recovered. Just as the parade trumpet sounded I was called to look at the horse, which was stated to be "in a strange way." I found the patella dislocated. Reduced it easily, but at every step it slipped out again, and the animal could not be left. I blistered the *heel*, and made the farrier-major walk alongside him, pressing on the joint. In this way he crossed the river, the man getting a good ducking,

and reached camp about an hour and a half after we did. We halted for a day; the heel was very sore, but he marched daily with us and was not again affected. I may as well state that I always blister the heel in these cases, as it makes the horse keep his leg forward and flexed. Those who have to treat these cases will do well to try it.

OVARIAN TUMOUR IN A MARE.

By W. A. WHEATLEY, M.R.C.V.S., Reading.

ACCOMPANYING this is a morbid specimen, a description of which may prove worthy a space in the next number of the *Veterinarian*. The subject whence it was taken was an aged half-bred mare.

I was called on the evening of July 26th, at nine o'clock, to see her. She was first observed to be ill about two or three hours before. Her attendant, thinking that she had an attack of colic, had just given her an antispasmodic draught. Upon my arrival I observed the following symptoms:

Extremities deathly cold, pulse very small and quick, breathing hurried, profuse perspiration, abdomen exceedingly tympanitic. Upon making an examination *per rectum*, which was empty for about two feet, I detected a laceration in that gut, and a little further on there existed an exceedingly hard substance.

I communicated this to the owner, and stated to him that I considered the case to be quite hopeless. He at once, very humanely, ordered the animal to be destroyed, and this was done forthwith. Unfortunately I was not able to attend the *post-mortem* examination, but the parts sent to you were put by for my inspection this morning. I find them to be diseased ovaries, the larger one weighing seven pounds. This appears to have been *attached to the rectum*, and by its own weight to have torn away from the gut, and thus caused the rent I discovered, and which would have terminated the existence of the animal.

The mare had never been known to have been ill previously. All the other viscera appeared quite healthy. The stomach and bowels were loaded with food.

DEATH OF A FOAL FROM BOTS ADHERING TO THE FAUCES.

By G. MATHER, M.R.C.V.S., Doncaster.

THE enclosed tongue and larynx I took from a foal this evening, and I shall feel obliged by your examining them, as at the base of the tongue you will find about a score of what appear to me to be perfect specimens of a small bot. I have only made a partial examination, as I was anxious to send the specimen off to you before it became decomposed, as the weather is so very hot.

The history of the case is as follows. Two days since I was requested to go to Lord Glasgow's breeding establishment to see a foal that was unwell. I inquired of the stud-groom how long the animal had been ill? and he informed me that three days ago it appeared to have a difficulty in swallowing, and that he noticed some saliva running from its mouth; and that, thinking it had a sore throat, he had rubbed some embrocation upon the parts.

On examining the animal I found it in a very debilitated state. Pulse very weak, and numbering 80. Ears and legs extremely cold, associated with shivering fits of the entire body. Mouth filled with partly masticated hay and grass. Tongue furred. The animal had seemingly a desire to eat, but was unable to open its mouth more than about an inch. It was likewise unable to swallow anything but liquids, and these only in very small quantities.

In spite of all I could do the power of swallowing got worse, and this morning it died, very much to their disappointment, as it was a very high-bred animal.

Could this foal have taken in the ova of the gad-fly and some of them become hatched, and, instead of passing into the stomach, have become adherent to the base of the tongue, and there set up such an amount of irritation as to cause the parts to swell so as to prevent the animal from swallowing?

OBSERVATIONS ON THE CASE.

We are indebted to Assistant-Professor Varnell for the following remarks on this singular case.

"The morbid specimen forwarded by Mr. G. Mather is of very rare occurrence. We have never met with such a one before, nor are we aware that a similar instance has ever been recorded.

"The parts came to hand in a good state of preservation,

although the temperature at the time was very high; so that we were enabled to form a pretty correct opinion as to the nature of the changes that had taken place during the life of the animal.

“The dorsum of the tongue, its root, the whole of the surface of the fauces, the *velum palati* and the margin of the glottal opening, as well as the lining membrane of the larynx and pharynx, were very much inflamed, and in places considerably thickened. These parts were likewise covered with a deposit seemingly consisting of a mixture of mucus, lymph, and pus.

“The most remarkable feature, however, of the case was in the cause that had given rise to the inflammatory state of the throat, namely, the existence of a number of small bots—the *Oestrus hæmorrhoidalis*’ (the ‘red-tailed horse bot’ of Bracy Clark)—which were found to be firmly adhering by their tentacula to the mucous membrane. Besides the number which were still in *situ*, many others had apparently been attached to the parts, but which had most likely been lost in the handling they had undergone.

“By a little reflection we may probably form a correct opinion as to how these parasites became located in this unusual situation. We imagine that the foal, by licking, gathered the ova in a state of perfection from the hair of its dam, on which they had been deposited, rather than from its own coat. The perfected ova being thus taken into the mouth became first entangled in its mucus, and finally lodged in those shallow recesses at the root of the tongue, where they became hatched.

“Some of these creatures measured as much as three eighths of an inch in length and rather less than one in diameter. They were firmly fixed, by their little hooklets, apparently to the inner surface of the mucous follicles. Their free extremities were of a deep red colour, and their bodies of a yellowish brown.”

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. WATSON, M.R.C.V.S., Rugby.

(Continued from p. 500.)

THE following names indicate the different terms applied to the inflorescence of grasses. The whole collection of flowers constitutes what is termed a *spikelet* or *locusta*. When the spikelets are situated on a common peduncle or flower, stalk, without any partial stalks, it is termed a *spike*; as in

the *Alopecurus pratensis* (meadow fox-tail-grass). When the spikelets have long pedicels (foot-stalks), they form a *panicle*, as in *Agrostis stolonifera* (florin-grass). When the flowers are all stalked along a common peduncle, it is termed a *raceme*, as in *Triodia* (heath-grass). Many other interesting subjects connected with the grasses may be obtained from a very cheap and useful little work, by Professor Buckman, entitled 'The Natural History of British Pasture and Meadow Grasses.'

When consulted on these matters we should endeavour, as much as possible, to direct the attention of the agriculturist to the comparative nutritive value of the different grasses, both as for pasture, and when made into hay; a fact which is apt to be too much lost sight of by him. The effects of large quantities of innutritious food is often well observed in the diseased state of the digestive and respiratory organs of many of our common cart-horses. I shall, therefore, give a brief outline of those grasses only which are considered the most valuable, either as affording good pasture or hay.

Poa (meadow-grass)—“*Panicle*, lax; *locusta*, of from five to ten florets; *glume*, of unequal valves, the inner *glume* notched at the extremity” (Buckman); named *Poa* from the Greek word *Pao*, to feed.

Under this head are described six principal varieties of meadow-grasses, but I shall confine my remarks to only two of the most interesting.

Poa Annua (annual meadow-grass).—“*Locusta*, of about five florets, not webbed” (Buckman).

This grass appears to be liked, as food, by all herbivorous animals. It is also one of our most widely distributed grasses, being found in almost all temperate climates, at all elevations between the sea-level and 2000 feet above it. So generally diffused is this grass, that it is found not only in the meadow, but “on the banks, by the road-side, among the mosses and stonecrops of the wall, on the garden path, among the stones of the beach just beyond the reach of the tide, with the reeds by the river, on the churchyard grave, and between the crevices of the city pavements, where the foot of the passenger daily treads.” It continues flowering and ripening its seeds, according to Sinclair, from the 18th of April to the frosts of winter. It is more valuable when mixed with other grasses, as affording fresh green herbage through many months of the year, than when made into hay. According to Professor Buckman, it has hardly any feeding properties; and on some of Lord de Manley’s land, notorious for scouring cattle, this grass was the prevailing one. This deleterious

property may probably be owing to the large amount of water it contains, and which, according to Professor Way, amounts to 79.14 per cent.

Poa pratensis (smooth-stalked meadow-grass).—" *Locusta* of about four acute flowers, with a web; culm and herbage smooth; ligule short and blunt; rhizome creeping" (Buckman).

This perennial grass, although allied to the above, is much more valuable, both for the feed it throws up early in the spring, as well as for the quantity of hay it yields. It flowers and ripens its seed from June to July. It contains a large amount of nutritious matter (according to Sir H. Davy, 78 parts in 1000), and its presence generally indicates good and well-drained land.

Hordeum pratense (meadow-barley).—" *Spike*, upright and compact; *glumes* all bristle-like and rough, not fringed; *outer glumella* of the middle spikelet about as long as its awn; *lateral spikelets*, with neither stamens nor pistils; *central flower* largest and perfect; *root* fibrous, annual" (Pratt).

This grass is generally found in good meadows, and contains a large amount of nutriment, although it produces but little herbage. It flowers and ripens its seed from the middle of June to the middle of August. I have found this grass to be much affected with ergot this autumn; but its chief peculiarity consists in the effect it produces upon the mouths of animals when made into hay. An instance of this came last year under my notice, and which I think possesses sufficient interest to be recorded.

On the 7th of July, 1858, I was requested by Mr. Darby, an extensive dealer in horses, residing at Rugby, to look at two of his horses, which appeared to have something the matter with their mouths. Upon a cursory examination, I could only detect a slight redness of the mucous membrane, and consequently I gave each of them a dose of cooling medicine, thinking that the affection might probably have proceeded from some slight derangement of the digestive organs.

On the following day, however, I was sent for again, and informed that a great many more of the horses had become affected with sore mouths. Upon examining the entire stud I found between twenty and thirty which were more or less affected. The leading symptoms were a discharge of saliva, frequently rubbing the nose and lips against the manger, and refusing food. I then made a more careful examination, and found a great number of small pieces of what appeared like chaff sticking very firmly to the buccal membrane, around

the tushes, and alongside the molar teeth, and also on the inner and superior part of the upper lip, and inner and inferior part of the lower lip, and likewise under the tongue. The last-named seemed to produce the greatest amount of irritation. So firmly fixed were these pieces in the membrane, that bleeding in many cases followed their withdrawal, and in every case they had caused a considerable amount of inflammation.

Upon examining them with a pocket lens, I ascertained that they were the awns of the *Hordeum pratense* (meadow-barley), which grass I found existed in great abundance in a load of hay that had been received on the premises a few days before. These awns are thickly set with a double row of minute spines, which upon the slightest friction propel them rapidly along.

(*To be continued.*)

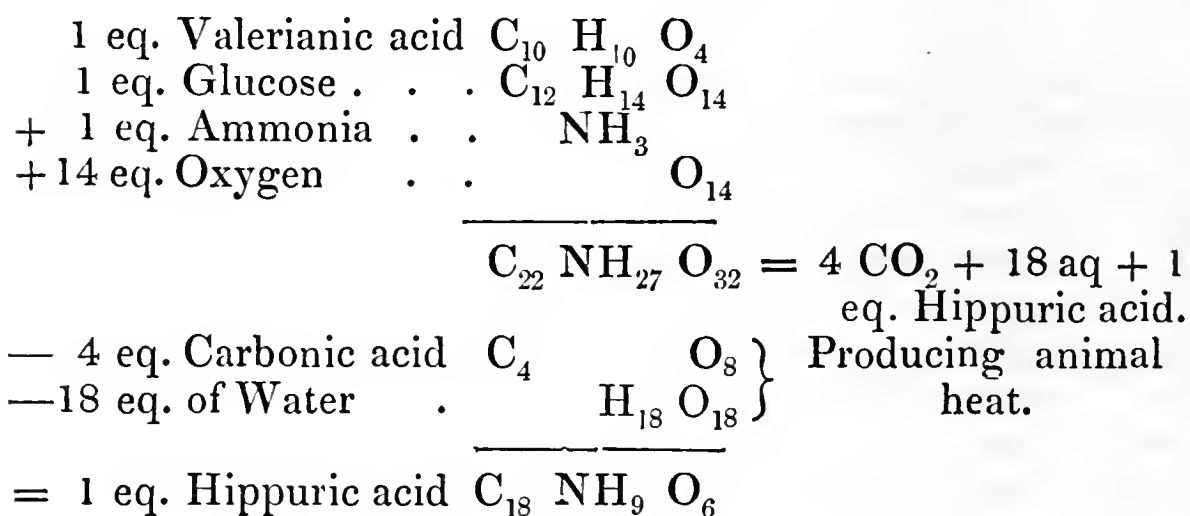
ON THE USE OF VALERIANIC ACID IN PLEURO-PNEUMONIA.

By P. SMALE, V.S., Leamington.

FROM analysis of the urine of several cases I have had lately of cows affected with pleuro-pneumonia, I found a total absence of hippuric acid, and instead thereof a large quantity of glucose and oxalic acid: the one proved by the addition of lime to the urine, which caused the formation of the characteristic crystals, viz; octohedra of oxalate of lime; the other, by Trommer's Cupreo-Potassaic Test, and by crystallization after evaporation. I therefore thought that the most likely means for effecting a cure would be to administer some organic acid which would possibly unite with the glucose, and form some compound easily eliminated by the kidneys, thereby preventing the formation of oxalic acid, and also relieving the lungs from the onus of oxidising the glucose. I fixed upon the valerianic acid, on account of its formula, and also because it is formed from leucine, which with tyrocine are the proximate substances resulting from the disintegration of fibrin and albumen. I therefore administered it in combination with spancemics daily, and at the expiration of five or six days I found the urine restored to its natural character, with the usual amount of hippuric acid, and without any of the other abnormalities, while the pleuritic symptoms disappeared, especially the characteristic grunt when the animals were

pressed on the dorso-lumbar spines. The appetite returned with the secretion of milk, and after a few days' longer continuance of the medicine, there was not a visible trace of the disease left in any of the cases I have thus treated.

The following formula may, perhaps, show the manner in which it is possible this is effected.



I am aware that almost any formula may be made on paper to support a theory, but I think this is so much in accordance with the manner that nature works in the disintegrating of the tissues, viz., by the addition of oxygen and the formation of CO_2 and HO (causing animal heat) with other compounds, that there may be some truth in it. At any rate I know that after administering valerianic acid, as above stated, I found hippuric acid in the urine, which I could not detect before by any of the means prescribed by Drs. Beale, Bowman, and Gregory, and what is still more satisfactory, the animals are restored to as good health, to all appearance, as any the owners have.

I know that hippuric acid is said to be formed of benzoic acid and glycolamide, but it appears to me by no means certain that because it is resolved into these by oxidation that it should be formed in the system by the union of these substances, in fact there are many reasons for a contrary opinion; the most conclusive to my mind is that in all cases of disintegration by oxidation, CO_2 and HO are given off in the formation of the compound, while in the case of this being formed of benzoic acid and glycol, oxygen is virtually taken away instead of added in the two eq. of water to form the amide, and no carbonic acid is given off.

VETERINARY OBSTETRICS.

A MARE DESTROYED FROM DIFFICULT FOALING.

By ANDREW CALLEY, Smith and Farrier, Kirkton
by Burntisland.

SIRS,—A bay mare, aged six years, healthy, strong, and in good condition, and at the full period of gestation with a first foal, was observed to be taken with the usual symptoms of foaling about mid-day, on Saturday, April 23d, 1859. I was sent for between one and two o'clock, and found, in place of the head presenting, that the two fore-legs appeared externally. I advised that professional skill should be got without delay, as I foresaw difficulty and danger, if labour was long protracted under such a preternatural presentation. Professor Dick, who was expected to be in the neighbourhood on that day, was sent for, but he unfortunately had been detained by professional business on the other side of the Forth, and his assistance could not therefore be obtained. Under these circumstances, Mr. Gamgee, of the Edinburgh New Veterinary School, on his return from his usual weekly visit to Kirkcaldy, was called in to superintend and assist the delivery. He arrived between five and six in the afternoon. At that time, the two fore-legs, as far as the knee joints protruded externally, and the labour pains were strong and regular. He, after some few ineffectual attempts to push back the presenting parts, cut off both legs about the knee joints. He then introduced a piece of wood, pressing it strongly on the chest between the legs, for the purpose of getting the head brought down, which was doubled up, but after long and fruitless efforts he failed to move the head from its fixed position, and relinquished delivery by this mode. He then ordered me to forge four sharp hooks of different lengths, from about twelve to twenty four inches, which I did, and when I brought them he caused me to introduce my hand, and fix one of them into the back part of the foal's neck, and Mr. Gamgee having attached a rope to a ring in the end of the hook, hauled with all his might and main, assisted by me, to bring down or alter the position of the head, but all in vain. He continued for several hours doing his best, to relieve the mare, but to no purpose; and about midnight, to which time from the hour of his arrival, before six o'clock, the animal had been alternately lying and standing, without being exhausted, and the labour pains continuing strong, he decided, that there was no al-

ternative left but to put an end to the sufferings of the mare, and to slaughter it. He accordingly destroyed her, by plunging a knife into, and dividing the spinal cord at the neck. I attended the case from first to last, and can vouch for, and attest the truth and accuracy of the preceding statement. I had hoped to have seen its details reported by Mr. Gamgee in the *Edinburgh Quarterly Journal of Veterinary Medicine* edited by him ; but as it has not so appeared, I have taken the liberty of submitting its important history to the profession through the medium of the *Veterinarian* into whose columns you will oblige me by inserting it. And you will confer an additional favour by appending what comments and remarks on it, and on the following points, you think proper for the practicable management of similar cases.

1st. When the two fore legs protrude externally, with preternatural presentation of the head, what *is the usual and best practice to follow*, in order to effect delivery *safely* to the mother? Is it more advisable to remove the legs by the *knees which present*, or *internally* by the *shoulder joints*? The latter mode is, I understand, recommended on high authority, and it is enforced by the advantage it holds out, by *enlarging the space* which is occupied by these parts within the pelvis, to afford greater facility, so altering the position of, and bringing down the head—an obvious advantage, which the removal of the more externally protruding extremities can in no ways promote.

2dly. Are there any instruments for diminishing the capacity of the head, in a preternatural presentation of it, or in a distorted or narrow pelvis, such as perforators, which are so safely and advantageously employed in human obstetrics along with crochets, when craniotomy is resorted to, in order to preserve the life of the mother?

3dly. In a case like the present, when the pelvis appeared normal and capacious, is it allowable to prescribe large doses of tincture of opium—say three ounces—or morphia, to allay uterine action, so as to allow delivery to be made by turning the foal, and bringing down the hind legs? Any plan seems to be preferable, and worth attempting, to the wilful destruction of mare and foal.

4thly. In the present case, *before mutilating the foal*, and even admitting that delivery per vias naturales *was impracticable*, would not the *Cæsarian operation* be justifiable, as it would afford a *good chance* of preserving the life of *the offspring*, and a *small one* of even saving that of the mother, compared to the destructive process of putting the last sentence of the law into execution upon both, without trial? It is matter of sur-

prise to me, as Mr. Gamgee is a great experimentalist, that he did not adopt some such expedient. I have heard of his spaying several cows in this neighbourhood, by introducing his hand into the vagina, and with a cutting instrument break down and cut off internally both ovaries, which were brought away, and although these operations have not been so safe and successful as promised in regard to life, or in prolonging and increasing the lacteal secretion, in as much as they proceed upon, as I think, an erroneous principle, and are contrary to the established laws of nature, I nevertheless am of opinion that his ingenuity lost an excellent opportunity of showing, *that the object of the veterinary art is never to destroy, without first exhausting every practicable means of saving life.*

I am, Sirs, &c.

To the Editors of the 'Veterinarian.'

Facts and Observations.

THE TREATMENT OF TETANUS BY WOURALI POISON.

IN our last we inserted M. Vella's experiments with the above agent. Since then, M. Velpeau has tried it in a case of tetanus in the human subject, by injecting into the cellular tissue a solution of the poison, beginning with the tenth part of a grain of the wourali, and increasing it until the later injections contained as much as half a grain. No particular effect was produced by it, and the patient died eight hours after.

In the *Lancet* appears a letter from Dr. Harley, in which, after recapitulating M. Vella's statements, he says, "You may, perhaps, remember that in 1856 I pointed out, in the pages of your journal,* the antagonistic action of wourali and strychnine—citing three experiments to show that these two substances have the power of reciprocally neutralizing the effects of each other, according as the one or the other poison is in excess. The conclusion I then drew from my experiments was, that wourali might be used as an antidote for strychnine. Since 1856 I have frequently repeated these experiments, and on several occasions have succeeded, by means of wourali, in

* 'The Lancet,' vol. i, 1856, pp. 619, 647. Art. "Notes of Three Lectures on the Physiological Action of Strychnia."

saving the lives of animals to which I had administered strychnine in poisonous doses.

Two years ago, through the kindness of Professor Varnell, of the Royal Veterinary College, I had the opportunity of trying the effects of wourali on a horse labouring under a very severe attack of tetanus. Although I did not succeed in saving the life of this animal, I nevertheless saw enough to convince me of the value of the remedy. Indeed, I was so convinced of its beneficial effects that I would have tried it on a boy labouring under traumatic tetanus whom I shortly afterwards saw along with Dr. Madge, had the disease not yielded to other remedies.

Seeing the success that has attended the administration of wourali poison by M. Vella, and the results of my own experiments, I feel anxious that this substance should receive a fair trial at the hands of the profession. No doubt wourali is a dangerous poison, but in hands habituated to its use I believe it is not more to be feared than opium or any of the stronger drugs.

DEATH OF CATTLE FROM EATING YEW BRANCHES.

AT Red House, Hursley, lately occupied by Mr. Fowlie, bailiff to Sir W. Heathcote, Bart., there is a yew hedge cut to fancy shapes and figures. The operation of clipping it was performed recently, and the cuttings, which Mr. Fowlie during his occupation had always carefully collected and burnt at once, were on this occasion suffered to lie on the grass of the field. Alongside this field, Mr. Newton, of Ashley, had about thirty heifers to feed, and one morning some boys who were out picking mushrooms found eight of them lying dead at different places. A ninth was apparently in great pain, and a strong emetic given to it showed the cause of the death of the others—namely, the eating of the yew cuttings from the hedge.—*Lancet*, Oct. 15.

PARTURIENT EFFECTS OF SULPHATE OF MORPHIA.

DR. Byrd says, I do not regard morphia as possessing superior properties to ergot, but I believe that it is as generally certain in its effects; and I have several times administered it with success in arousing the dormant contractions of the uterus, when the secale had failed.—*American Med.-Chir. Rev.*, May, p. 529.

Extracts from British and Foreign Journals.

THE FOOD OF PLANTS.

(Continued from page 590.)

In the present generally received opinion of the action of manures, it is supposed they exert an influence in several ways—in imparting the matters they contain that are favourable to the growth of plants, and also by adding, by future decomposition, to the quantity of vegetable matter already in the soil, and thereby increasing the fertility by operating upon other matters in the soil, breaking the texture, and setting at liberty other ingredients, and forming new combinations favourable to the growth of vegetable life, and by producing changes and alterations in the constitution of the soil, and bringing it into a more fit condition for yielding food to plants, and also by acting partly in all the different ways now mentioned. Thus, it may be said that some manures afford nourishment only; others yield nourishment, and, by leaving an earthy residue, add to the bulk of the soil; and others, again, do not nourish in their own nature, but exert an agency on other substances, and convert them into food for plants; and there is probably no manure that does not operate in more ways than one. These supposed modes of operation are resolved into the mechanical and chemical agency of manures: the first, by reducing the texture, dividing the earthy particles, and rendering the soil more open and porous, and in other cases more firm and compact, and adding to it by decomposition; and the second operates by the chemical attraction and affinities which different ingredients brought into contact exert on each other and on the soil forming new combinations, and producing aëriiform or elastic fluids by means of the heat generated in the soil during the operation of the chemical combinations—thus joining with the mechanical agency in producing a state of action highly conducive to the growth of plants.

The decrease in the quantity of produce on land by the ceasing of the action of manures may be accounted for by the chemical affinities having exhausted their activity, and every particle of the earth being at rest, and no more heat being generated to produce the elastic fluids. And as experience has ever shown that the benefits derived from the use of

manures are generally in a direct ratio with the quantity applied, and with the character of the upper soil with respect to quality and depth, it may be concluded that the superiority of manures in the latter case arises from the greater quantities of each substance affording a greater number of affinities and combinations that promote the growth of plants. And experience has also taught that if manures of any kind be applied to any subsoil prepared as the upper soil generally is, no such fertilizing effects will ensue; that subsoils differ in quality, and that some are very pernicious to vegetation, and require long exposure, working, and manuring to dispel the noxious qualities. And it may be inferred that the failure in the action of the manures arises from the substances brought into contact having less chemical affinity, and consequently not forming the combinations that are necessary for the growth of plants, and that the upper stratum, or cultivable soil, has undergone a long series of preparations, which has fitted it for entering into immediate action with the manures applied to furnish food for vegetables; and the mode of that preparation may never be known. The action of manures, and the benefits derived from them, are much affected and modified by local circumstances and external agencies, and by a soil too wet or too dry, and by a climate being too dry or too humid; and as similar constitutional qualities in soils are rendered very different by these causes, many cases will find that manures are similarly affected, and give proportional results.

It seems evident that organic matter furnishes food for plants; and recent chemical analysis has found the impoverishing effects inflicted on soils by cropping to consist in a diminution of that substance, and not of any of the earthy constituents. The insensible progress of fermentation and the suction of vegetables impoverish it, and deprive it of organic remains, and leave the metallic residue or earths,—forming very poor soils,—and ochres where the ferruginous principle abounds. The organic matter would seem destined to repair the losses of the vegetable kingdom, and the earthy residue that of the mineral; for there we find diamonds, spars, and gypsum, and similar productions.

The pure earthy part of the dung is very small, and, after a perfect putrefaction, bears an inconsiderable proportion to the soil it was intended to manure. The great use of soils seems to be in affording a bed to plants, in which to fix the roots, and derive nourishment slowly and gradually by the roots from the earth and from atmospheric air. In order to account for the presence of carbon in plants, it is supposed that vegetables

decompose carbonic acid at the same time with water, and absorbs its carbon; but this supposition has not been proved, though it has gained strength since the decomposition of carbonic acid combined with soda by means of phosphorus has been discovered. Others are of opinion that vegetables, earths, moulds, and water of dunghills furnish the carbon attenuated and even dissolved in water; that plants absorb it, and do not extract it from carbonic acid. According to this hypothesis, manures afford only carbon, and the water is nothing more than a saturated solution of this principle. To these data the theory of vegetation is at present restricted.

Four earths have been found in plants—lime and silica most abundantly, and magnesia and alumina in much less quantities. All the alkalies have been found in the fluids of animals: potash not very common; soda in all fluids combined with albumen; ammonia in urine, and during its decomposition. And of the earths are found lime, magnesia, and silica; and of the metals, iron in blood, and manganese in air. None of the earths are simple substances, and animals have a power of forming them by the process of digestion. And it seems very probable that plants have a power of forming earths and other substances from their principles absorbed by the roots from the earth or from the atmosphere. Hence solution by chemical analysis of the constituent parts of the organisation of animals, and our knowledge of the nature of the substances that compose it, have not given any information in respect of the food which should be supplied to them: they possess the instinctive power of choosing and rejecting by smell and taste, and thereby teach what articles are most agreeable to them, and consequently most suitable for promoting their growth. Any food they eat contains few or none of the substances found in their constituent parts: they must be formed during the process of digestion by many unknown agencies and combinations; and if an analogy be drawn between animal and vegetable life, it may be supposed that the food of plants differs as much as that of animals from the constituent parts, and that the latter are derived from the former by similar processes and combinations. If an animal be restricted to one kind of food, or to two, the growth of the solid parts of the body and the secretion of the fluids will go on uninterrupted, and the animal will thrive and fatten. The kinds of food contain none of the substances found in the animal organization; and though some of the minor parts may differ something in quantity than if fed on a greater variety of food, yet all the principal parts are unaffected. Charcoal has been found the only fixed ingredient in plants, and that substance

has been supplied to the roots without the least apparent advantage. If it could be applied in the form accessible to the roots of plants, it is not known that it would pass through the elaborations and combinations in the plant, and ultimately constitute charcoal in the organization. The case of an animal shows that whatever kind of common food is consumed, the necessary parts are formed; and it may be supposed that plants have similar power of producing the necessary constituent parts from various substances both dissimilar to each other and to the materials that form the composition of the plant. Of elastic matters there may ever be little or no control; they are generated by causes much beyond command or application; and of the solid substances that are applied as manures, it is not known what part, or if any part of them, passes into the plant as nourishment, what agencies they and the soil exert over each other, and what combinations they enter into with the atmosphere, by which they ultimately become so highly conducive to the growth of plants.

The expectation of gaining any knowledge of the matters which form the food of plants, and of a mode of applying those matters to the soil, from an investigation of the constituent parts of the plants themselves, must rest on a very uncertain supposition; for in any case of similarity or analogy that exists in the natural world, no deduction of that kind can be made, and from observation and experience all the knowledge that is possessed on these subjects has been derived. If the veil were withdrawn with which nature has enshrouded many of her works beyond the reach of our visual organs, and our eyes were permitted to roam over a field very probably for ever and very justly forbidden to man, the probability is that our practice might not be any way improved thereby. On the contrary, the attention might be diverted from principles that never fail, and wander in pursuit of an Utopia, probably never to be obtained by our utmost scientific research, or reduced to practice by any human skill. But on the other hand, it is very possible to use any advantages that may result from such investigations, without departing in any hurtful degree from the solid principles of practice. The combination of science with practice, so far as the former is capable of application, will ever constitute the safe mode of proceeding with every judicious cultivator, ever bearing in mind, and never for a moment forgetting, the influence of physical causes and of external agencies that bear on every such application, on which the whole matter hinges, which are generally overlooked, and over which human agency never can exert any control. From want of a due attention to the different circumstances of

application, much misunderstanding and acrimonious disputation has arisen, which, with a little more knowledge of the subjects on both sides, might have been avoided.

In the preceding observations on the action of manures on soils and on plants are embodied the latest opinions on the subject, the results of the scientific investigations of the most distinguished chemist (Davy) of our age, whose attention was turned to the specific object of applying the aid of chemistry to promote the cultivation of the earth. The results of his labours are stated by him with much philosophic candour and becoming diffidence; and though no improvements in practice have been derived from them, they have nevertheless greatly enlarged our knowledge on these points, and have shown that everything has been done that the best exertions of our scientific knowledge can do, and point out the path of investigation to future inquirers, who may by some single discovery amply compensate for all former disappointments, accelerate and greatly advance the progress of the art beyond what might have been expected during a great number of years of ordinary advancement, and introduce a new era into its history and application. Such studies, though not attended with evident practical utility, as all human speculations from their nature cannot be so, are highly deserving the attention of rational beings. By laying open the wonders of creation they increase our reverence and admiration of the great Source of being, who supplies every created thing with the proper nourishment and in the most regular order and harmony, by ways and means beyond our finding out. On these subjects it would be presumptuous to be sanguine and unphilosophical to despair.—*Farmer's Magazine*.

ON THE PRESENCE OF ARSENIC IN SOME ARTIFICIAL MANURES, AND ITS ABSORPTION BY PLANTS GROWN WITH SUCH MANURES.

By EDMUND WILLIAM DAVY, A.B., M.B., M.R.I.A.

It is well known to Chemists that sulphuric acid or oil of vitriol, as it is met with in commerce, almost always contain variable proportions of arsenic; but it appears to me that this fact has been overlooked by the public, and that they are not aware to what extent this highly poisonous substance occurs in general in commercial sulphuric acid, and thus becomes the means by which arsenic enters the different substances in whose preparation that acid is employed.

My attention was first called to this subject by the difficulty I experienced in procuring any commercial sulphuric acid which did not contain a comparatively large proportion of arsenic, rendering it quite unfit and dangerous to be used for many purposes of experimental illustration. This arises from the fact, that the vitriol manufacturer has found that it is far more economical for him to make sulphuric acid from iron pyrites (a compound of sulphur and iron), which he can obtain for about twenty-five shillings a ton, than from native sulphur, for which he is obliged to pay about seven pounds for the same quantity. This ore of iron contains almost invariably more or less arsenic, which passes into the sulphuric acid manufactured from pyrites; whereas, the native sulphur containing little or no arsenic, the sulphuric acid made from it is not so liable to be contaminated with that poisonous substance. Pyritic sulphuric acid, on account of its being much cheaper, seems in a great measure (at least in Dublin) to have taken the place of that manufactured from native sulphur, and hence the occurrence latterly of so much arsenical sulphuric acid in commerce, and the presence of arsenic in so many substances in the preparation of which that acid is directly or indirectly employed.

The vitriol and manure manufacturers have been in the habit of making an inferior kind of pyritic sulphuric acid, which, owing to its dark colour, is termed brown sulphuric acid; this contains a comparatively large proportion of arsenic, and is chiefly used in making superphosphate and other artificial manures; and the manufacturer appears to think that the acid which is too impure to be used in the arts is good enough for making manures and for other agricultural purposes. This, however, from the experiments I shall presently refer to, appears to be a great mistake.

Knowing that sulphuric acid containing arsenic was so largely employed in making superphosphate and other artificial manures, and that they therefore must contain variable quantities of that substance, I have for some time thought that it was not improbable that plants grown with such manures might imbibe or take up from the soil where those substances had been employed, a certain quantity of arsenic, and in this way be rendered more or less unwholesome as articles of food.

As a preliminary experiment, to ascertain if plants had the power of taking up arsenic when it was presented to their roots in the soil, I transplanted into a flower-pot in June, 1857, three small plants of peas, and when they had recovered the transplanting, I commenced watering them every second or

third day with a saturated aqueous solution of arsenious acid; and this treatment was continued for more than a week without its appearing to exercise any immediate injurious effects on the plants. At this time, however, I was obliged to leave home for some months, so that I was unable to continue longer the watering with the arsenical solution, or to observe further its effects on those plants. On my return I found that they had grown to about their full size, had flowered, and produced seed, showing that arsenic, though so very destructive a substance to animal life, had not apparently exercised any decided injurious effects on those plants.

Having collected the stalks, leaves, and pods of the peas, I carefully kept them for examination, to ascertain if those plants, under the treatment they had been subjected to, had taken up any arsenic. Professional business, however, of one kind or another prevented at the time my pursuing the subject any further, and I did not resume the inquiry till recently, when, being engaged in the detection of arsenic in a case of suspected poisoning, my attention was again called to this subject.

In the case I allude to, the quantity of arsenic present in the stomach and its contents was very minute, and I had recourse to several methods for the detection of that metal before I could affirm positively to the existence of arsenic; and I found that by employing conjointly Reinsch's and Marsh's methods, by far the most satisfactory results were obtained.

These methods are well known. The first consists in boiling the suspected substance along with diluted hydrochloric acid, together with some pieces of metallic copper, when, if arsenic is present, it will be deposited in the metallic state on the surface of the copper, giving it a peculiar steel-grey appearance; and on heating the copper after being washed and dried, the arsenic can be volatilized as arsenious acid, and identified by its appropriate tests. The second method consists in bringing the suspected substance, in a state of solution, in contact with a mixture of zinc and diluted sulphuric acid contained in a suitable apparatus, when the arsenic, if present, will combine with the hydrogen being generated, and will form arseniuretted hydrogen, a gaseous compound which is characterised by its producing a stain of metallic arsenic when any cool surface is held over a small jet of the gas whilst burning. On trying by these methods the stalks and leaves of the pea-plants which I had watered with arsenious acid, I found that arsenic could be readily detected in them, and was present even in the seeds, showing clearly that arsenic had been freely taken up by those plants,

and that every portion of them appeared to have imbibed the poison.

This experiment having shown me that arsenic might be taken up in considerable quantity by plants without its destroying their vitality, or appearing even to interfere with their proper functions, I proceeded to ascertain if the arsenic as it existed in different artificial manures (such as the superphosphate), would in like manner be taken up by plants growing where those in manures had been applied. To determine this, I transplanted, last April, a small cabbage-plant into a flower-pot which I had previously put a mixture of one part of superphosphate to four parts of garden mould. The cabbage after a short time appeared to recover the transplanting, and when it had been growing in the mixture for three weeks, I cut off the top of the plant, which looked perfectly green and healthy. On examining it for arsenic, I obtained the most distinct indications of the presence of that substance, though only a very small amount of cabbage, viz., 113 grains, were used in the experiment. This result was therefore perfectly conclusive as to the power possessed by some plants, at least, of taking up arsenic from manures containing that substance. As in this experiment I was aware that I had placed the plant in a most favourable condition for absorbing the poison, and that a larger proportion of superphosphate had been employed than was used in practice, my last experiments were to ascertain if the presence of arsenic could be detected in our crops grown with superphosphate in the ordinary way.

I procured for this purpose some Swedish turnips which had been grown with superphosphate, and having most carefully washed each turnip to remove every particle of adhering clay, I cut up in small pieces 2lbs. weight of one of the turnips, and boiled them in a large glass flask for about three hours with 36 fluid ounces of distilled water, to which I had added 3 ounces of hydrochloric acid (spec. grav. 1.14), placing in the mixture 100 grains of perfectly clean and bright turnings of metallic copper. After removing the copper turnings and washing them well with water to separate the vegetable matter, and then boiling them for a few moments in a mixture of spirit and ether, to remove any fatty matter which might have been deposited on the metallic copper, and finally, after the spirit and ether had been poured off, washing well with distilled water, the copper was found to have acquired the characteristic steel-grey appearance produced by the presence of arsenic under such circumstances.

The copper turnings were then carefully dried, and afterwards heated strongly in a glass tube closed at one end, when

a very perceptible white sublimate was produced, which, on being dissolved in hot distilled water, and this solution added to a Marsh's apparatus in operation (the hydrogen flame, which before the addition of the solution did not give the slightest indication of a metallic stain on a cool piece of white porcelain being placed over it), produced immediately the characteristic stains of metallic arsenic in a most striking manner, proving beyond all doubt that the matter deposited on the copper was metallic arsenic, and the sublimate arsenious acid, formed during the heating of the metal.

This experiment was repeated with the same results, using $2\frac{1}{2}$ lbs. weight of turnip taken from another of the turnips, it being previously peeled. I may observe that in these, as well as in the foregoing experiments, I was most careful that no source of fallacy might arise from the arsenic being derived from the reagents employed, which were previously ascertained to be free from arsenic; and to avoid all possibility of error, comparative experiments with the reagents alone were made in almost every step of the different investigations.

The turnips I experimented on were grown by Mr. John Rathbone, Dunsinea, Co. Dublin, and I was informed that six hundred-weight of superphosphate had been used to the Irish acre, the superphosphate being previously mixed with peat and clay, in the proportion of one part of superphosphate to three parts of the mixture of peat and clay.

These experiments appear to me to be perfectly conclusive as to the power possessed, by some plants at least, of taking up arsenic when it is introduced into the soil by artificial manures which contain it, even when they are employed in the usual way and proportion by agriculturists, and how objectionable it is to use any materials in the preparation of those manures which will introduce so destructive and dangerous a substance as arsenic into the soil.

I thought it would be desirable to ascertain the proportion of arsenic present in the brown sulphuric acid used by one of our Dublin manufacturers for the purpose of making superphosphate and other manures. In 12 fluid ounces of the acid, by the usual methods of ascertaining the quantity of arsenic in such cases, I obtained an amount of metallic arsenic equivalent to about 12 grains of arsenious acid, or 1 grain to each fluid ounce; and the ounce of acid weighing about 800 grains, the arsenious acid would be 1-800th part of the weight of the acid, which would be equivalent to about 2.6 lbs., or nearly 3 lbs. weight in the ton of sulphuric acid. But it is probable that the generality of brown sulphuric acid employed contains much more arsenic than this sample

I examined, its specific gravity being only about 1·780 whereas the usual strength of the acid is 1·845. Dr. Owen Rees found 13·5 grains of arsenious acid in 12 fluid ounces of commercial sulphuric acid; and Mr. Watson, in the *London Medical Gazette*, states that the smallest quantity of arsenious acid which he detected in the same amount of commercial acid was 21·3 grains. There is therefore every reason to suppose that the acid usually employed for agricultural purposes contains a far greater quantity of arsenic than the sample I examined; and as the proportion of sulphuric acid used in making these artificial manures is very large (thus, for example, in the manufacture of superphosphates, the most valuable manure of this class, about one ton of acid is used for every two tons of bones employed), the quantity of arsenic present in such manures must be considerable.

These facts appear to me to have some important bearings, for though the quantity of arsenic which occurs in such manures is not large when compared with their other constituents, and the proportion of that substance which is thus added to the soil must be small, still plants may, during their growth, as in the case of the alkaline and earthy salts, take up a considerable quantity of this substance, though its proportion in the soil may be but very small. Further, as arsenic is well known to be an accumulative poison, by the continued use of vegetables containing even a minute proportion of arsenic that substance may collect in the system till its amount may exercise an injurious effect on the health of man and animals.

As connected with this subject, I may observe that I was informed of a curious fact—that sheep did not appear to like Mr. Rathbone's turnips which were grown with superphosphate, so well as those where the ordinary farm-yard manure had been employed, and that they could not be made to eat enough of the former turnips to fatten them properly. If this was really the case, it would appear to favour in some degree my views as to the probable unwholesomeness of vegetables grown with manures containing, even in small quantities, so deadly a poison as arsenic, which my experiments have shown that plants are capable of taking up from such manures.

Finally, these investigations appear to have a medico-legal bearing; for in cases of suspected poisoning by arsenic, where the evidence may chiefly depend on the detection of a small quantity of that substance in the liver and other viscera, as is sometimes the case, my experiments would tend to throw much doubt and uncertainty on such cases, because

the presense of a minute quantity of arsenic in the viscera may not be owing to its direct administration, but to its having found its way into the system through the vegetable, and, indirectly, animal food taken by the individual.

These and other important considerations connected with this subject can only be determined by a series of carefully conducted experiments, which I purpose commencing, and I hope at some future time to have the pleasure of communicating their results to this Society.—*London, Edinburgh, and Dublin Philosophical Magazine.*

ON THE USE OF ARSENICAL AND LEAD PIGMENTS IN THE COLORATION OF PAPER-HANGINGS, AND OTHER ARTICLES OF FURNITURE, DRESS, AND ORNAMENT.

By Dr. HASSALL.

THE subject of green paper-hangings is one of considerable importance, both in a sanitary and manufacturing point of view; and although much has been said and written, clear and correct notions regarding it are by no means generally entertained. Some writers have treated of green papers as though the colouring matter employed always consisted of arsenite of copper, whereas the fact is, as I have already pointed out to some extent in a former communication, that in a very large proportion of the green papers in use the colour consists of a mixture of chromate of lead and Prussian blue; this mixture is nearly always employed in the case of the dark green flock papers. Now, chromate of lead is as poisonous a substance as arsenite of copper; and if the papers prepared with the one pigment are rightly condemned, so ought those to be that are coloured with the other. Further, these same pigments are almost universally employed in the dyeing of green carpets, curtains, table and chair covers, silks, muslins, and a variety of other articles of furniture, dress, and ornament; and if the papers coloured with them are to be condemned, so in general should the articles above enumerated, as well as many others; for the objections urged against the green papers, apply for the most part equally to these.

In the room in which I am now writing there is a green Turkey carpet, a green velvet sofa, several green morocco chairs, and three green table covers. Now, if the views of those who have so strongly cautioned the public against the

use of green papers be correct, and if they are really injurious, in the first place, I ought to be very ill, suffering from some of the effects of either lead or arsenical poisoning; and secondly, I ought (which would be a serious sacrifice) to get rid forthwith of the greater part of the furniture contained in the room which I habitually occupy.

Again, since nearly all *yellow* worsted and cotton goods are dyed with chromate of lead, these ought likewise to be discarded.

It thus becomes evident that the subject possesses extensive bearings, sanitary and commercial; and it is therefore of extreme importance that the public, on the one hand, should know whether these pigments are injurious, and, on the other, that the manufacturer should likewise be thoroughly well informed on this point.

I will now make a few remarks, which will serve to show whether, and under what circumstances, these green papers are injurious, and these remarks will apply equally to the papers coloured with either the arsenical or lead pigment.

All green papers may be divided into the unsized, sized, and flock. In the first, the colouring matter is spread over the surface of the paper, and is not secured by a layer of varnish or size; in the second, the attachment of the pigment is ensured by this coating; while the flock papers are thus made—the flock consists of a layer of dyed wool, the colouring matter being enclosed in the hairs of the wool forming the flock.

Now, danger to health from the use of green papers can only arise in two ways, either by the volatilization of the poisonous pigments contained in them, or by their mechanical detachment and dispersion through the air of the room, when they fall on the eyes, or become inhaled. No apprehension need be entertained as to the first-named cause, for chromate of lead and arsenite of copper are not volatilised at ordinary temperatures. There remains, then, for consideration only the danger arising from the detachment of the poisons. It is obvious that this is greatest in the case of the unsized, and least in the flock papers—those, in fact, the use of which has of late been so strongly denounced—least in those, because the colouring matters are enclosed in the hairs of the wool, and for the further reason that these hairs are so strong and elastic that they are not easily broken and detached. In fact, these flock papers resemble precisely woollen and cotton goods dyed green or yellow; and if their use is to be condemned, then, as I have before remarked, so ought that of most other green and yellow articles of wearing apparel and furniture—a somewhat serious conclusion at which to arrive.

These facts are sufficient to show that the danger arising from the use of green paper-hangings is not very great, and that it is almost confined to the unsized or unglazed papers; they at the same time prove how desirable it is that the use of arsenite of copper and chromate of lead as pigmentary substances should, as far as possible, be dispensed with, and this might be readily done in most cases by the substitution of other and unobjectionable colours.

In my 'Reports on the Adulteration of Food,' I showed that chromate of lead and arsenite of copper were frequently employed to colour sugar confectionery, as well as other articles. Such a practice is fraught with danger, and cannot be too strongly denounced.

I am induced to make these remarks, because I believe, first, that greater alarm than is needful is entertained by the public as to the use of these green papers; and second, that the interests of manufacturers are greatly prejudiced thereby. While it is the duty of the sanitarian to guard with jealous eye the public health, he should be most careful that in doing so he does not unnecessarily interfere with trade and manufactures.—*Lancet*.

POISONING OF CATTLE BY PAINT.

WE learn from Mr. Rolfe, V.S., Harleston, that Mr. Fairhead, of Rushall, lost, in June last, two valuable cows from eating some old paint which was mixed with some manure taken, *six* years previously, from the house of a glazier and painter, who had incautiously emptied the refuse of the paint pots upon a manure heap; and that, in 1844, the late Mr. Pearce, of Rushall, lost fourteen bullocks, which were affected with similar symptoms as Mr. Fairhead's cows. These beasts were kept in a yard, about which was thrown some manure, obtained from the same person. It was not at that time discovered what was the cause of death.

Some years since, also, the late Mr. Rush, of Palgrave, lost three cows, which were poisoned by eating some painted canvass which had been nailed on the barn doors, to keep out the wet; and that in another locality, eight cows died from eating food which had been mixed in a tub in which there had previously been sugar of lead.

Cattle are fond of licking and chewing paint, and it cannot be too generally known that these preparations of lead are deadly poisons.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Journal des Vétérinaires du Midi, for June, 1859.

CLINIQUE DE L'ECOLE IMPERIAL DE TOULOUSE.

Par M. SERRES, Chef du Service de la Clinique.

THE subject of these remarks was a cow in whose œsophagus a piece of beetroot, of an irregular shape, had become fixed. The man in charge of the animal took the handle of a cart-whip to force it down, and in this he succeeded to his satisfaction. The animal fed and ruminated as usual after the operation, but these favorable symptoms did not last long, for, in the evening of the same day, the cow became dull, and refused her food. The proprietor, alarmed at this, sent to the Veterinary School for assistance, when a student, of the fourth year, was immediately ordered to attend the case. He found the cow dull and dispirited, and standing with her head and neck extended, and making efforts from time to time to vomit. The mouth also was hot, and filled with saliva.

Towards the inferior third of the cervical portion of the œsophagus was an elongated tumour, which was very painful to the touch. Pressure upon this caused violent contractions of the muscles of the neck. The temperature of the body was increased; the horns were hot; the pulse accelerated; the mucous membranes injected, and the respiration increased. These symptoms, taken in connexion with the history of the case, ought to have sufficed to the forming of a correct diagnosis; but it did not occur to the student that there might be a lesion of the œsophagus, caused by the handle of the whip which had been used, and he considered the case as one of simple phlegmon, and prescribed accordingly. By the next morning the symptoms had become much aggravated, and Mons. Serres now accompanied the student. He found, not only that the tumour existed in the neck, but that the whole of the inferior cervical region on the left side was emphysematous, as was also the greater

part of the shoulder and the thorax. The appearance of the animal denoted great anxiety. The head was protruded; the respiration frequent and difficult; and the general indications of febrile action being severe. It was apparent that he had to deal with a rupture of the œsophagus, associated with the introduction of alimentary substances, both solid and liquid, into the cellular tissue. The emphysema was to be attributed to the gases which had become disengaged in the rumen.

The treatment consisted in scarifications of the emphysematous parts, accompanied by pressure, for the purpose of expelling the gas. Frictions with the liniment of ammonia were likewise had recourse to, and other remedial means, both local and constitutional, adopted; but, notwithstanding all the care which the animal received, she died on the twenty-seventh day succeeding the injury, in a state of marasmus.

The post-mortem examination presented the following lesions. There was a rent in the œsophagus, irregular in shape, and having very ragged edges. The muscular tissue was of a reddish brown hue, and the mucous lining of the tube, to some extent, both above and below the opening, was of a dark red colour. Opposite the laceration a cavity existed, which was filled to repletion with alimentary matter mixed with mucus, and which exhaled an offensive putrid smell. The tissues immediately surrounding the sac were also of a yellow brown colour, and emitted a similar odour to that of the contents of the cavity. Beyond this, however, the gangrenous condition had not extended, although the parts were discoloured. The heart was flabby, but the blood presented no alteration, excepting that the coagulum was less solid than natural.

INFLAMMATION OF THE LYMPHATIC GANGLIA AND VESSELS ON THE INSIDE OF THE THIGH.

THIS malady is of frequent occurrence amongst heavy draught horses, and many cases of it have been treated during the last quarter. The patients were, generally, adult animals, and either of a lymphatic or lymphatico-sanguineous temperament. No traces of external injury could be perceived in the affected parts.

The cause of this affection is not known, except it be attributed to the heavy loads which these animals are compelled to drag. At the commencement of the disease, there is a great difficulty in the act of progression. The leg is carried outwards but the step is tolerably firm, and when the horse is standing still, the lameness cannot be perceived. On the supero-internal region of the limb, along the course of the vessels, there is usually a slight infiltration, of an oblong shape, which is painful on pressure. About twelve hours after the invasion, the tumefaction has greatly augmented. It is hot and painful, of a cylindrical form, and spreads over the whole of the thigh. The lameness now becomes greatly increased, and during the next thirty to forty hours the tumefaction has extended over the whole surface of the limb. The fever also is more marked; when the malady has reached its climax. The malady now seems to remain stationary for a few days; and then, being at its period of resolution, the swellings become less and the fever decreases. The lameness also disappears, having lasted from twelve to fifteen days; but the intensity, as well as the duration of this malady, present great variation, without reference to the treatment which has been adopted.

The best treatment consists in the use of a liniment of ammonia, applied with friction; two or three applications of which will suffice to bring about a resolution. Mercurial ointment has also been recommended, but the parts must be often rubbed with it. Eight to ten applications of this unguent have been advocated. Nitrate of potash is to be given interally, and scarifications had recourse to when the malady has reached its highest point.

AN AGED COW.

POLL ANGUS, a celebrated cow, the property of Mr. Watson, of Kieler, died lately at the age of thirty-five years and six months. She had twenty-five calves. At twenty-nine she ceased giving milk and breeding; but she did not fall off in condition until two years ago, and only refused her food two days before she died.

THE VETERINARIAN, NOVEMBER 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat. —CICERO.

OPENING OF THE SESSION AT THE ROYAL VETERINARY COLLEGE.

THE Scholastic Session of the Royal Veterinary College commenced on Monday, the 3d ult., simultaneously with that of most of the medical schools of the metropolis. The introductory address was delivered by Professor Simonds, and was listened to throughout, with marked attention, by probably the largest audience which has ever assembled within the College walls. In another part of our journal we give the lecture *in extenso*, which relieves us of the necessity of making any comments upon the principles therein inculcated, or the practical nature of its doctrines, except to say that we most fully accord with the sentiments of its author. Did occasion require we should not hesitate, even connected as we are with this journal and the College, to freely express our opinions in opposition to any teachings which we believed were opposed to the best interests of the profession. Fortunately from this exercise of stern justice, we are now exempt, and in place thereof we have the more pleasing duty of recommending the address to the notice of our readers.

Among those who were present on the occasion, besides the other Professors of the College, the President of the Royal College of Veterinary Surgeons, the Principal Veterinary Surgeon of the Army, and several members of the Court of Examiners, we noticed the following members of the profession : Messrs. Appleton, Batt, Bailey, Blake, Bottle, Braby, Burr, Constant, Cooke, Cornelius, Cotterill, Cox, Dickens, Dollar, Drew, Dudfield, Ferris, Field, Forbes, Gowing, Hall, Harpley, Harrison, Jones, Johns, Legrew, Lines, Lowe, Marshall, W. and F. Mavor, Naden, Pring, Robinson, Roberts, Silvester, Stickney, Stanley, Stockley, Turner, Whiteman,

Wilson, Withers, and Woodger, and also many personal friends, and members of the medical profession.

It is most gratifying to observe the growing interest which attaches to these annual *reunions*, and we trust that they are to be taken both as an evidence of an established unity in the profession, and an assurance of its progress.

The veterinary profession stands in a far more elevated position than formerly, and its practice is now closely watched by the public, and especially by the agricultural portion of it, than was wont to be the case. We hail this with satisfaction, believing that the more our proceedings are scrutinised by the agriculturist, the more will he appreciate the man of science in his treatment of disease. Quackery and presumption, and the mere routine of practice, must recede before the march of intellect, and it will be well with us when these have been entirely driven from the yards and pastures of the proprietors of cattle and sheep. Long since they would have disappeared had the instructions of the College, from its foundation, been extended to other animals besides the horse, and had also methods been adopted to enlighten the minds of the occupiers of our soil. These too long neglected means are now in full operation, and each succeeding year will but witness their increasing good effects. Hand in hand, however, must they advance, or no real advantage will be reaped by either. An educated agriculturist is as much a matter of necessity for his own and his country's benefit, as is a scientific veterinary surgeon for the arresting of the flood-tide of empiricism, in the application of its dogmas to the well being of domesticated animals. The force of circumstances may call for still greater improvement in the education of both, and we venture to hope that in the day of need the student of veterinary medicine will not be left unprovided or uncared for. Much might be written, and that profitably, upon a subject of this kind, but as our space is already too greatly trenched upon, we close our remarks by urging the pupils of the present day to give good heed to their instructions, and to avail themselves of the advantages they now enjoy.

We had written thus much when the following came to hand. We readily give place to it.

MESSRS. EDITORS,—Since the period I graduated at Alma Mater I have rarely missed being present at the introductory lecture given at the opening of the Royal Veterinary College. But seldom have I been so much gratified as I was when at that delivered in the earlier part of the present month. To see the theatre more than crowded, for I observed that some of the professors could not obtain seats therein, or they gave them up to others, and the passages leading thereto filled with attentive listeners, was to me extremely gratifying, and I could not help saying, “This looks well; it is a proof of progress, and must do good.”

Intimately connected with the practice of veterinary science as I have now been for many years, I have longed to see its advancement; and casting my eyes around upon the pupils assembled, I thought I saw in their faces that intelligence and zeal which could not fail to be productive of all that I have so long wished to witness. There were none of those—at least, I could not recognise any such—which were once stated “always to make the best veterinary surgeons,” by one whose memory I shall ever respect, for I was his pupil; and his instructions were not thrown away upon me, I hope. But I have learned that talents are to be employed, or they become worse than useless. The persons I refer to are the groom and stableman. Not that I would discard these, but then the groom and stableman should possess the necessary prerequisites for study, or the profession will not be advanced by them. This was an error in his judgment, and where or who is he who never errs? Instead thereof were before me young men of good education apparently, and unquestionably of respectability of appearance. These are they, I mentally exclaimed, we have to look to! On these our onward progress depends; and, “as the twig is bent, the tree’s inclined,” so, I trust, they will, from the admonitions given them by their teachers, derive profit, and make them their guides and safeguards for life. Tis a momentous period for many of them, for on their conduct while at College hinges their future well or ill doing hereafter. Difficulties they will have to contend with, and for a time these may seem formidable; but what will not perseverance and industry accomplish? Thus I reflected from the stand-point I had taken. Nor was I inattentive to what was being enunciated. Much that I heard I concurred with, but not all. For instance, when the existence of the “New Army Warrant” was announced, I confess I wished that the lecturer could have added, *and these appointments are alone to be hereafter conferred on the graduates*

of the *Royal College of Veterinary Surgeons*. Cannot this be effected? Surely it might; since it would operate as an incentive to our further recognition as a corporate body. Was not this the time for the Principal Veterinary Surgeon to the Army to have made a stand for the dignity of his profession? By so doing he would have gained immortal honours.

Again, I remember having heard or read, that the obtaining of the rank of a commissioned officer for the veterinary surgeon was not wholly due to the late Professor Coleman; still, I do know, that he rejoiced in the position his pupils had acquired. However, let this pass; there are those who can speak more definitely on this head than I can. I would not be thought to indulge in censure where there was so much to praise. I came away much pleased, breathing a sincere wish for a long continuance of what I had witnessed, and increased prosperity to the parent institution and all connected with it.

Since my time there have been many improvements made both in the studies of the pupils and for their accommodation, and others, I have no doubt, will follow. To stand still, it has been observed by you, is to retrograde. Let this not be our state. Nor have I any fear that it will, from what I know of those who are at the helm of affairs.

Thus have I given vent to my feelings, in which, doubtless, many others participated. Should they not have expressed themselves in a better way than I have done, perhaps you will give place to this in your journal, or, rather, *our* journal, since it has been well said by you, it is "what we make it."

Believe me,

Yours sincerely,

"AMICUS."

To the Editors of the 'Veterinarian.'
October 25, 1859.

Veterinary Jurisprudence.

UN SOUNDNESS OF A COW.—DURATION OF DISEASE WITHOUT DETECTION.

BRISTOL COUNTY COURT, 23d June 1859.

PARRY v. EDWARDS.

A JURY was sworn to try this action, instituted to regain the price paid for a cow, purchased by the plaintiff, a dairyman, of the defendant, a farmer, under a warranty of soundness, although, as was alleged, suffering from disease, of which it died. The plaintiff also claimed to re-

cover one guinea paid to Mr. Kent, the patriarchal and skilled veterinary surgeon of Bristol, for making a *post-mortem* examination of the animal.

Mr. Stone, of the Western Circuit, instructed by Mr. Trenerry, of Bristol, appeared for the plaintiff, and the defence was conducted by Mr. Edlin, instructed by Mr. Chadwick, of Long Ashton.

George Parry, the plaintiff, deposed to purchasing the cow on the 1st March last, when, in reply to his queries, the defendant said, "she is all right and sound; I'll warrant her, as I bred her, and she has never been off my farm." She had a calf at her side. After the price had been paid, the defendant said, "she is perfectly sound, and a good milker." She died on 14th April last. In cross-examination he denied that he bought the cow upon condition to return her within a week, if he did not like her. He admitted having sold a cow about a week previously which had died through a "chill." After that, he had his stall whitewashed. He fed his cows on mangold twice a day, and sometimes on chaff and grains; the cow he had from Edwards would not eat the latter. He fed her partly on dry hay. Had never known cows suffer in health through being put under cover after running in grass.

Robert Davis, a butcher, corroborated the evidence of warranty, and, in cross-examination, said the calf was healthy, and exhibited no appearance of having come from a diseased mother. Replying to Mr. Stone, he said he saw the cow after death; the lungs and liver were much diseased.

Wellstead, the plaintiff's servant, stated that he had the care of his master's cows. From the first, Edwards' cow would not eat her food, and was very restless; gave only eight or nine quarts of milk a day; she gradually got worse, and gave no milk at all for five days before death; she had difficulty in breathing, and continually "panted."

Mr. Pearson, a farrier, saw the cow on 11th April last; she was then in a dying state; prescribed a nourishing meal for her; she laboured under diseased lungs of a chronic nature; her breathing was very bad and hard; the disease must have existed for many months; saw her again on the 13th; she still wasted; next day saw her dead; inspected her inside; the lungs and liver were diseased, and of an incurable character; the internal appearances confirmed his previous opinion that the disease had existed several months.

Cross-examined—He advised the application of a blister, or mustard plaster, the first time he saw the animal. It is applied in cases of acute inflammation. The stall in which the cow was kept was perfectly "sweet."

William Jarvis, a butcher, opened the carcass and found the lungs very much diseased. They had partly grown on to the side. Upon lifting them they fell from off the windpipe, as if rotten.

Mr. John Kent, M.R.C.V.S., made a *post-mortem* examination of the animal on 15th April. The lungs were generally diseased throughout. A great portion of the antero-inferior parts possessed large scattered tubercles, and in some places were carnotized. The heart was attenuated and pale, as in cases of abdominal dropsy, or what is commonly styled "rot" in sheep. The right lobe of the liver was of a dark-mahogany colour, completely disorganised for its proper functions. The texture was so softened and broken down that on pressure with the finger it could be divided through its whole substance, without separating its peritoneal covering. The cow had probably been in a diseased state upwards of six months. There was a peculiar absence of any inflammatory symptoms.

In cross-examination, the witness said—The adhesion to the ribs might have come on by an attack of inflammation. Cows will be as fat with the disease as without it; but sometimes they lose their flesh. The person used to milking the cow might not have discovered its illness until she had been actually dying. The pleura was pale, and free from inflammation.

Mr. Kent produced preserved parts of the lungs, and the pleura. These he compared with a portion of a healthy lung, and lucidly pointed out the appearances and ravages of "the enemy," which afforded convincing proof that it had taken a strong hold in the former.

It appeared from the evidence (of which we can give but barely an outline) that the defendant had been invited to examine the cow before death, and afterwards to send a veterinary surgeon to the *post-mortem* examination, but did not do so.

The defendant's counsel averred a warranty had been given, conditionally; that the animal should be returned in six days, if not approved; and contended that, inasmuch as the plaintiff did not send it back before the expiration of the limited period, he had no cause of action; but, should the jury find an absolute warranty had been given, the defendant would be equally entitled to a verdict, because it would be established that the cow died from inflammation which had come on after her sale to the plaintiff—most probably through being taken from the fields and suddenly placed in a shed where another cow had recently died of a contagious disease. He also argued that the guinea paid to *Mr. Kent* was not recoverable.

The defendant deposed that he had had the cow in question six years, and had five calves from her. When he sold her, he agreed to take her back in a week, if she was not approved. She had always been a good milker, and had never ailed at all; on the contrary, she was the healthiest he ever had. She was grazed on good land, and fed on grass. It would injure the health of a cow to have taken her from grass and confine her in house.

In cross-examination, the witness admitted that he did not inform the plaintiff how the animal had been kept.

Mrs. Edwards said the cow had never shown any symptoms of illness.

Alfred Bush gave similar testimony, and added that she had been fed with hay twice a day.

Mr. John Batt, of Backwell, described himself as a cattle doctor of thirty or forty years standing, and said, he saw the dead body on 15th April, and examined it. He took away portions of the liver and lungs; the latter were highly inflamed. In his opinion the disease had not existed more than four or five days. There certainly were no tubercles on the lungs. The inflammation was acute. The liver was slightly "swelled." The cow may have died through infection received from being placed where another had died.

By *Mr. Stone*—When I saw the cow a slice of the liver had been taken away. The lungs were perfect in form, and the state of the wind-pipe was perfect.

Mr. Edwin John Batt, M.R.C.V.S. (son of last witness), said he examined the parts of the liver and lungs taken by his father. They showed very acute inflammation, and nothing more. The liver was not in the least diseased, but it was a little enlarged.

The witness's attention was directed to the parts produced by *Mr. Kent*, and, in reply to *Mr. Stone*, said, there were no tubercles in the piece of preserved lung, which he cut open in several places; but added, that it exhibited traces of decided chronic disease, and was in a highly

inflamed state. He could find nothing the matter with the preserved liver.

Mr. John Batt was recalled, and caused considerable amusement by pertinaciously insisting that the new and healthy lung produced was unsound.

Mr. Stone—Now, Mr. Batt, be good enough to look at that [the sound] piece of lung, and tell me what you, as a practical man, think of it?

Witness (carefully examining it)—This is pretty nearly as I saw it before (laughter).

Mr. Stone—You can see no tubercles there?

Witness—Certainly not, Sir.

Mr. Stone—Is there anything peculiar about it?

Witness (examining it again for several seconds)—Oh, yes; I should say there was. It is in an inflammatory state, just as when I saw it at Mr. Parry's (loud laughter).

Mr. Stone—I won't trouble you with another question, Mr. Batt. The learned counsel then replied upon the whole case, and

The Judge summed up, especially directing the jury that the guinea paid to the veterinary surgeon was not recoverable, as it was paid for services rendered after the cow's death, and, so to speak, not for endeavouring to "keep it alive."

The jury consulted a considerable time, and then requested further information as to the alleged tubercles.

Mr. Kent was accordingly recalled, and again pointed out their existence in the preserved lung, and practically explained their formation, result, &c.

The jury again deliberated, and found a verdict for the plaintiff for £10, 11s. 6d., the difference between the price paid for the cow and the sum realised by the sale of the carcass and calf.

MISCELLANEA.

A BEE STORY.

THOUGH our beautiful country is happily in the enjoyment of a state of peace, a circumstance has recently occurred in our quiet little town on the hill (Coleshill) where the battle raged as furiously, while it lasted, as any yet recorded as taking place between the rival hosts who are striving

"To feed the crows on Italy's fair plain,

And fertilise the field they each pretend to gain."

At the residence of a gentleman named Perceval (brother to the gifted and unfortunate statesman of that name who, half a century ago, fell by the hand of the assassin Bellingham, in the lobby of the House of Commons,) a swarm of bees having been successfully housed, the hive was placed, covered with a cloth, on the grass-plot in front of the house. Mr. Perceval has a donkey, and as "the fates" would have it, the animal was at the time tethered and quietly browsing in close proximity to the hive. Whether it was that "Jack" inquisitively put his nose underneath the covering, or that the bees considered him as encroaching too near their new

settlement, one of the scouts alighted in no very gentle mood on some part of his hide, inflicting so unpleasant a titillation that "Jack," throwing his heels out, set the hive rolling some distance from its stand. Out flew the inmates, buzzing angry imprecations, and in an instant the indignant swarm had covered the hide of their assailant from "stem to stern." "Jack" kicked, jumped, and brayed, and committed all kinds of curvettings, using his tail as a flail to clear off his smaller assailants, and flapping his ears, right and left, to dislodge those about his head quarters; but finding "the stings and arrows" of the outrageous enemy rather too much for him in a stand-up fight, he adopted the Lancashire mode, and throwing himself upon the grass-plot, commenced a fearful and exterminating slaughter by rolling himself over and over. The outcry alarmed the family, and Mr. Perceval, who is advanced in years, and afflicted with lameness, advanced to the scene of action; but seeing a fresh object, the angry insects left their prostrate foe and alighted on the hat of Mr. Perceval. The servant lad, seeing the cluster on his master's hat, imprudently removed it from his head, which then became the object of attack, and it was only by dexterously throwing the cloth over his head and removing him from the scene that Mr. Perceval was not seriously injured, as the bees that "Jack" had disturbed were whizzing about in that angry state of excitement that makes them highly desperate and dangerous. It is satisfactory to know that after all the hubbub the insects were rehived, and that no one received any great amount of injury, although "Jack," the originator of the disaster, is often seen to throw a glance of suspicion across the plot, and by sundry shakings of his ears and tail to endeavour to indicate that, like the great Duke of Waterloo, "He never fought such a battle before, and he hopes never to fight such another."—*Birmingham Daily Post*.

OBITUARY.

DIED, on the 21st July, at New Brunswick, from an attack of apoplexy, M. Cumming, M.R.C.V.S., late of Ellon, Aberdeenshire. Mr. Cumming, before leaving Scotland for America, had devoted himself to literary pursuits, and published two valuable papers relating to the diseases of cattle in the 'Transactions of the Highland and Agricultural Society.' On his arrival at New Brunswick he became connected with the '*Courier*' newspaper, to which periodical he was a constant contributor.

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Communications and Cases.

ON THE OPERATION OF TENOTOMY IN THE
HORSE.

By G. W. VARNELL,
Assistant-Professor, Royal Veterinary College.

(Continued from p. 559.)

HAVING considered the comparative merits of the two modes of operating for division of tendon or ligament, we will next endeavour, very briefly, to explain the way in which these organs are repaired.

The first result of the division of a tendon or ligament, however neatly it may have been effected, is the loss of a small quantity of blood, which becomes effused between the divided ends of the tendon or ligament, and also into the surrounding areolar tissue. For some little time, also, after actual hæmorrhage has ceased, exudation of blood, minus the red particles, continues to take place. This may even last for a day or two. The material so poured out infiltrates the fibres of the divided organ, and also the surrounding tissue which forms a sheath for the tendon, thereby slightly increasing the size of the limb at this part, and at the same time forming a temporary bond of union. The effused mass also prevents, to a certain extent, the areolar tissue collapsing into the gap caused by the receding of the two ends of the severed tendon or ligament; but it is not thought to take any share, or at any rate but very little, in the formation of permanent tissue.

This effused mass very soon becomes organized in the form of lymph-cells, and these, it is said, speedily become more distinctly nucleated and elongated in the shape of spindles;

but in all well-made sections, the inflammatory product is of small amount, and takes little share in the healing of the wound. Indications of their forming fibrous tissue have never been seen.

This temporary bond of union is of a reddish-gray colour presenting here and there points of exuded blood, which give to the whole a mottled aspect. The ends of the divided tendon are of a ruddy hue and slightly enlarged.

Two or three days after the operation, the effect on the injured nerves having passed off, and the blood-vessels having regained their normal condition, an exudation of the true material for reparation takes place, out of which fibrous structure, identical with tendon or ligament, is ultimately formed. The temporary bond now degenerates, the lymph-cells become shrivelled, and finally disappear altogether.

The new portion which intervenes between the divided ends of the ligament or tendon is composed of the same structure as the original, but the fibres are not so uniformly arranged; for while those of the old are placed side by side, in a direction parallel with each other, and in a line with the long axis of the tendon, those of the new substance take a very indefinite course, being interwoven with each other in various directions.

As the development of the new substance advances it becomes tougher and stronger, so that at the end of about two weeks it is capable of supporting more weight than might be expected. But at this stage the newly forming tissue is easily elongated, and thus it often happens that the organ operated on becomes too long, and should it be one of the flexor tendons, the toe will turn up more than is desirable. After a time, however, the new substance will contract in all directions; it becomes shorter, and likewise smaller in circumference, more dense, better defined, and less yielding; therefore if the elongation be not too great, we may calculate, that when these changes have taken place, the tendon or ligament will be as near as possible of the proper length. But, on the other hand, should it appear to be of a suitable length during the process of reparation, it will be found, after the new structure has fully contracted, to be far too short to allow the foot being placed in a proper position on the ground; and although the shortening of the organ will not be so great as before the operation, yet it will be sufficiently so as to render the operation an unsuccessful one.

The tendon of the horse which I operated upon at Bromley, Essex (see page 555), in which the wound healed so satisfactorily, was found, after the new parts had contracted to

the full extent, to be too short. This case alone will suffice to illustrate the above fact. I could introduce others in which the tendons after the operation were thought to be too long, but, I believe, that if the animals had been allowed to live, and sufficient time to elapse for the contraction of the new substance to have taken place, the result, in all probability, would have been quite satisfactory.

To show the consequences that may follow the operation of "tenotomy" under different circumstances of disease, we will suppose two cases of deformity only in two different horses. It matters not which of the legs it is, provided the distortion is of equal extent in both; the pathological condition of the parts, however, shall be different. For example, in one case the flexor tendon is diseased so that the heel of the foot is persistently raised from the ground, but the tendon moves freely in its cellular sheath, which is not implicated. In the other supposed case, the tendon is not only diseased in the same way, but, in addition, adhesions have taken place, both to the surrounding sheath, and also to the tendon it is in apposition with, thereby preventing the motion that it otherwise would have possessed. Now suppose we divide the diseased tendon of each leg, by the same kind of section; what will be the comparative results, supposing the healing process is equally favorable in both cases? I think most likely they will be somewhat as follows: The one in which there was disease of the substance of the tendon only will, when divided, recede to such an extent that the cut ends will be at a considerable distance from each other, and the new substance, which will be thrown out to repair the gap, will be disproportionately lengthened. But in the other case, where adhesions had taken place as above described, the cut ends of the tendon cannot recede from each other only a short distance, and consequently the intervening new portion will be, as compared with that in the former case, very short; and if no means be resorted to so as to elongate it, and break down the bands of adhesion, the operation will be a failure.

In deformities similar to the above, the inexperienced or unreflecting operator may be greatly deceived in his attempts to remove distortion by this operation. In the first case he may think, from the toe being turned up, that when perfect reparation has taken place, the tendon will be too long, and this may induce him to put a high-heel shoe on the foot, for the purpose of favouring contraction of the new substance, he not being aware of the amount of shortening that is sure to take place if the parts be left in the above

condition. In the other case, after the tendon has been divided, he finds that the ends do not recede very far from each other, nor can he straighten the foot to the extent he wishes; he therefore applies greater force, with a view to elongate the impediment, or to break it down. This he appears to accomplish, and after a time the horse gets his heel to the ground. The operator now believes that all is done that is required, but, to his annoyance, after about a year has passed away from the time the limb was operated on, he finds that the heel will be nearly as much elevated from the ground as at first. Therefore, to ensure success, time ought to be allowed in the first case for the contraction to take place, which is known to occur during the consolidation of the new material; and in the latter case, where adhesion had existed between the two tendons, both ought to have been divided.

I will now give the result of an experiment instituted by me during the winter of 1854-5, on an ass that was bought for dissection. Assisted by some of the pupils, I divided, by the subcutaneous section, the tendon of the flexor-pedis muscle of one of the fore legs, and the superior sesamoid ligament of the other. In performing these operations, only a few drops of blood were lost. Pledgets of lint were placed over the small punctures I had made in the skin, and over these, light bandages, and the animal was then led to a loose box.

The following day the bandages were removed; when no swelling could be perceived to have taken place, and on the third day the punctures in the skin had apparently healed. No trouble whatever was taken with the animal from this time, and had it not been for the distorted condition of the limbs, no one would have imagined that any operation had been performed on him.

At the end of three weeks from the time I operated, the ass was destroyed. I reserved the fore legs, which I carefully examined and prepared for the purpose of having drawings made of them.

Fig. I.

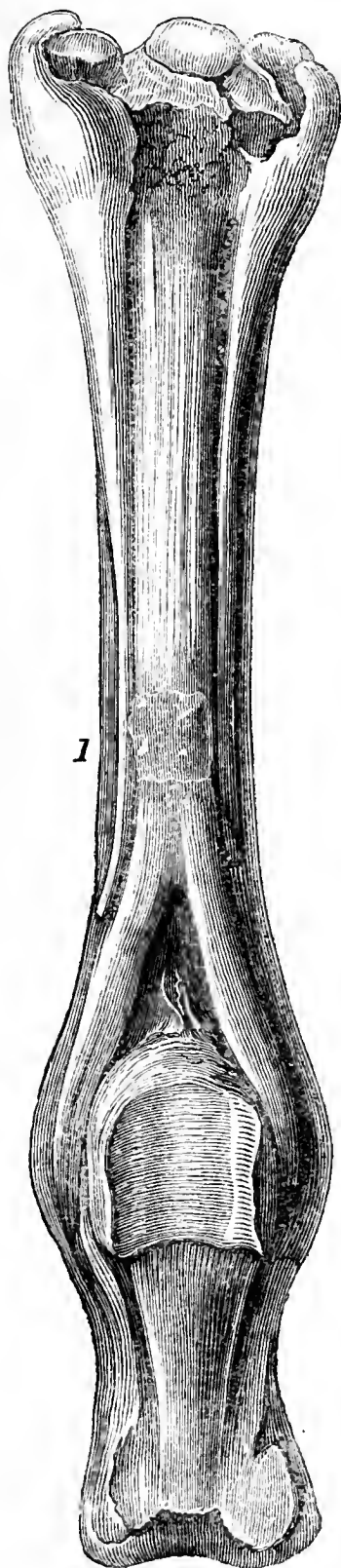


Fig. II.

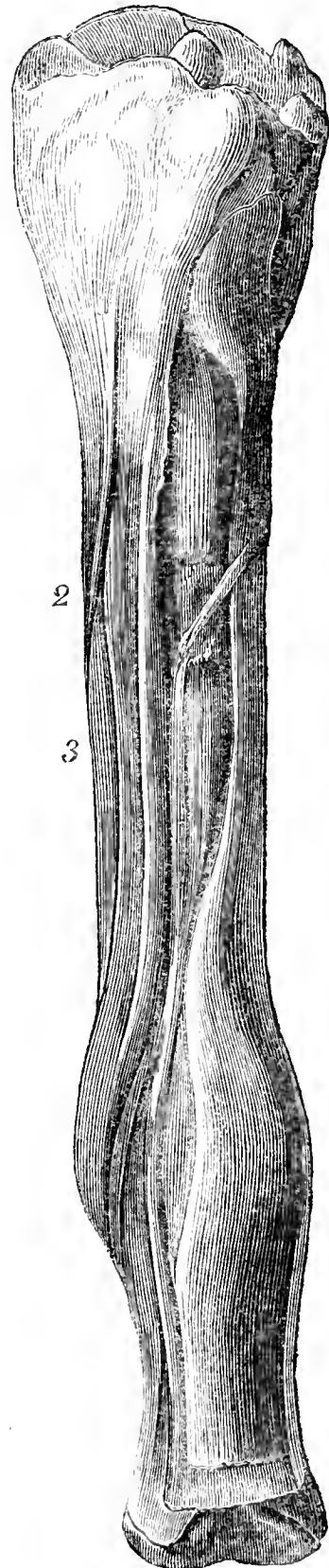


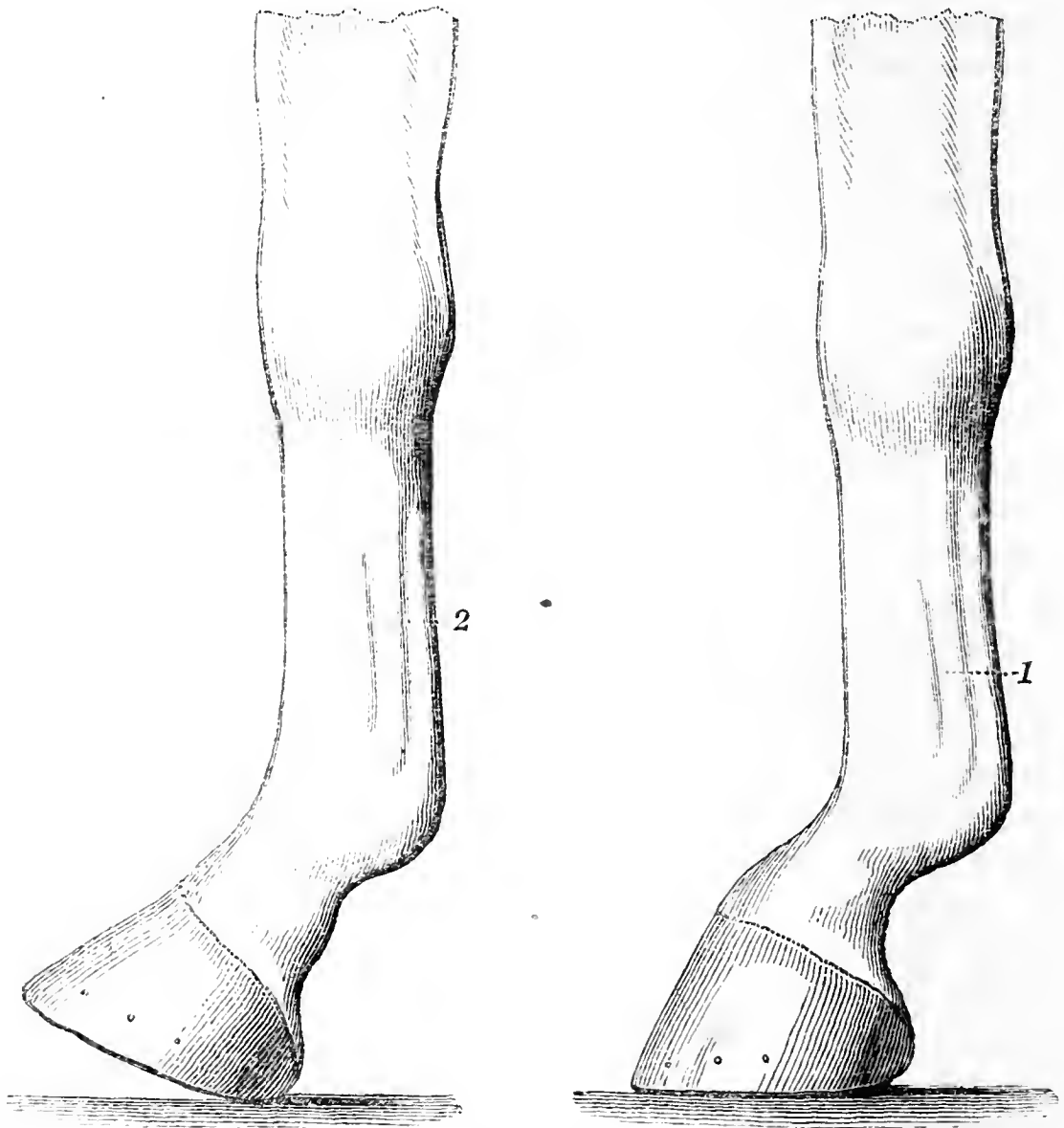
Fig. I. Shows the new substance filling up the gap between the ends of the divided ligament. It is a little larger than the original, and extends a short distance out on each end, thereby embracing it in the form of a clasp. 1, division of ligament.

Fig. II. Shows the new substance intervening between the receding ends of the divided tendon. Passing obliquely across it is a branch from the inner metacarpal nerve, which was not divided by the operation on the tendon. 2, division of tendon, which the artist has drawn too high up the leg. 3 is the proper site for the operation.

The position of the two limbs operated on is worthy of notice, as the altered outline of them indicates their form when an actual rupture of either tendon or ligament has taken place. (*See woodcuts*—III, division of tendon; IV, division of ligament.) These engravings are intended to represent the form of both the legs immediately after the operation.

III.

IV.



1, shows the place of division of ligament. 2, that of tendon.

I am not aware that the superior sesamoid ligament has been purposely divided, or its division even recommended in cases of deformity, before the year 1850, when I suggested that such an operation might be resorted to with comparative safety. I then stated that I had never performed the operation, but I should not hesitate to do so if a suitable case presented itself. Since that period I have operated, but only experimentally, on the case above referred to, yet the success attendant on it warrants me in recommending it worthy of trial.

To perform this operation subcutaneously, the foot and pastern bones should be well flexed upon the large metacarpal bone. This position of the limb will cause the ligament in question to be very lax; the bistoury is then to be placed flatwise between it, the flexor tendon, the large metacarpal artery, vein, and nerve, all of which will press against the back of the knife when its edge is turned against the ligament, which should now be rendered tense, and then with a slight sawing movement with the knife, the ligament will be easily severed. The knife is then to be turned flat on its side again, and carefully withdrawn. We must expect to lose more blood in this operation than during the division of the flexor tendon, but not sufficient to cause any apprehension, as the hæmorrhage may be easily arrested by a compress.

The place I should choose to make the division of the ligament, is a little above its bifurcation, or at the upper portion of its inferior third. I prefer this part for the following reasons: First, from its being a little above the bursæ of the pastern-joint; secondly, because if much above this point, the ligament is imbedded between the two small metacarpals, or, if in the hind leg, the two small metatarsal bones, which would interfere with the section.

The objects I had in view in carefully dissecting the limbs I operated upon were—1, for the purpose of examining the amount of reparation that had taken place; 2, the character of the material thrown out for that purpose; and 3, the relative connexion it held to the original tendon and the surrounding parts. As far as the skin was concerned, scarcely any indication of an operation having been performed could be detected, so completely had the punctures healed. The areolar tissue in the neighbourhood of the wound was slightly infiltrated with organized lymph, and at the point where the knife entered, it was of a reddish-brown colour like the rust of iron, which appearance was doubtless caused by the blood effused at the time the operation was performed.

There was a slight difference in the size, form, and colour of the new substance which intervened between the divided ends of the tendon and ligament. That between the cut ends of the tendon, as a whole, was quite as large as the original, except at its lower part, which was constricted; while the new material, between the divided ends of the ligament, was a little larger throughout and deeper in colour.

The above difference in aspect and size of this new tissue, in each leg, may depend upon the following causes, which in a surgical point of view are interesting. With reference to

the reparation of the tendon, the amount of secretion for that purpose would be in larger quantities from the upper cut end than from the lower, which will account for the fact of its bulk being greater. This end of the tendon would also be drawn, by muscular contraction, further from the point where the division was effected, consequently a greater distance from the effused blood ; which circumstance will account for the rusty aspect of the lower as compared with the upper end of the new substance.

With regard to the new substance of the divided ligament being comparatively larger than that of the tendon, this may be accounted for by the fact of the ligament being the more vascular of the two, therefore it would be able to throw out a larger amount of material for this purpose. The tendon, I may remark, is principally supplied with blood from small arteries that are given off from the radial artery, the severing of which would, to a certain extent, cut off the supply of blood to the lower portion of the tendon, thereby lessening the power of reparation to the lower portion as compared with the upper. But with regard to the ligament, which is supplied with blood both from the small metacarpal and also by the ascending branches from the large, the former going to the upper and the latter to the lower part of the organ, it would, unlike the tendon, be as fully supplied with blood at the lower part as at the upper.

I have dissected the limbs of horses that had been purposely destroyed in consequence of the tendons having been accidentally divided. One case in particular I remember, in which the cut ends of the organ differed materially from each other in a pathological point of view. In this instance the upper end of the lower portion was in a state of gangrene, its fibres were separated from each other, and saturated with grumous matter, there not being the slightest indication of reparation. It was not so, however, with the end of the upper portion of the tendon, which was of a light-red colour and slightly enlarged, having adhering to it a small quantity of newly organized lymph. May not this condition of the two ends of the severed tendon depend, first, upon the upper portion being more freely supplied with blood, and thus have the material for repair more abundantly ; and secondly, by its being drawn, by the contraction of the muscles, further away from the opening in the skin, and consequently from the effects of the atmosphere and other injurious influences ? With regard to the *lower* portion of the tendon, it being comparatively feebly supplied with blood, and there being no power to withdraw the cut end it would, unlike

the upper portion, be exposed to such causes as tend to disintegration and death.

The foregoing observations, I think, fairly show the value of the subcutaneous mode of dividing the tendon or ligament over that of the open wound, and they also suggest the necessity of regulating, as much as possible, the amount of blood to the parts operated on ; for, as before stated, too much may tend to induce the suppurative process, and too little, a deficiency of structure. On the other hand, the exudative material may be abundant, but of that plastic nature which would unfit it for the reparation of the organ. This would suggest the necessity of attending to the general health of the animal, and tonic medicines, with a more generous diet, might be called for. Or it may be, under different circumstances, necessary to restrict the diet, and give cathartic agents.

We have asserted that ligament is capable of throwing out a larger amount of material for reparation than tendon is, in consequence of its being more vascular ; and the result of our experiments seems to warrant us in coming to this conclusion. It might from this be also inferred, that the more richly organs are supplied with blood the more readily a breach in their structure would be repaired. But this appears not to be universally the case, for it is found that in the division of either a ligament or tendon the material for repair is more quickly provided, and a union sooner formed, than is the case in division of muscles. I may likewise further observe, that while the first-named organs or parts are united, as we have before stated, by tissue identical with that of their original structure, such is never the case with the latter, this being invariably by fibrous tissue.

REMARKS ON POISONING BY YEW.

By CHARLES DICKENS, M.R.C.V.S., Kimbolton.

IN your journal for the past month I find an article extracted from the *Lancet*, to the effect that eight beasts were found dead in a field adjoining the residence of Sir W. Heathcote, in consequence of having eaten the clippings of a yew hedge, and that a ninth would probably have shared the same fate had not a "strong emetic" been administered. Now, reasoning from analogy, this may seem very feasible to the

readers of the *Lancet*, but I think you would confer a very great boon on those who peruse your journal, and are engaged in cattle-practice, by placing them in possession of any agent or compound which could be depended upon as a sure, safe, and certain *emetic* when administered to the ruminant. Of an agent of this kind I must confess my individual ignorance, nor have I ever heard of such a one from any veterinary practitioner.

The accounts which are scattered through the pages of the *Veterinarian* and other journals, of poisoning by "yew," when partaken of, by either the horse or ox, are so contradictory, that I hope at your leisure we shall be favoured with the results of your extended experience on the subject; or, perhaps, your talented botanical correspondent, Mr. Watson, will give us the benefit of his researches. I would merely hazard an opinion to the effect that, I think, very much of its immediate deleterious action, like most other vegetable poisons, depends greatly on the quantity, and perhaps something on the quality also of the ingesta which is contained in the stomach at the time the yew is taken. Something, likewise, will probably be found to be due to the season of the year and the variety of the plant.

[Further investigations are certainly required for the elucidation of this subject, notwithstanding that numerous cases of poisoning by yew have been recorded. In our July number we gave an epitome of the present state of knowledge respecting the effects which are produced on animals by the plant. Our present number also will be found to contain the particulars of a case of poisoning of a filly by the same agent. To this we have appended a few observations, from which it will be seen that a particular variety of the plant was deleterious.]

Like Mr. Dickens, we do not know of any agent which can be depended upon for producing vomition in the ox. Large quantities of tepid water, injected by the stomach-pump into the rumen, have occasionally led to an ejection of its contents, but we have seen serious results follow such attempts to unload this viscus.]

MEMOIRS OF A VETERINARY SURGEON.

THOUGHTS IN THE SICK BOX.

By THOS. GREAVES, M.R.C.V.S., Manchester.

DISEASE, in all its varied and mysterious aspects, confronts the general practitioner at every turn, and not unfrequently startles and arrests his attention as he is following the even tenor of his way, by some case assuming a strange and more than ordinary character, thus demanding from him much serious reflection. He finds, also, that disease differs considerably in its features in one locality from what it does in another; and that this, too, is true of affections of the same organs. Again, he cannot fail to have observed that disease has differed in its various phases, whereby a change of its type has been engendered during the last twenty or thirty years, and that it requires now a very different method of treatment. The practitioner of the one epoch and the one locality has all his ideas disarranged; and when carefully watching and comparing these characteristics with each other, he finds himself perplexed, and his most favorite treatment unsuited. The experienced and observant practitioner will have become so perfectly familiarised with the various phases of the diseases which are most predominant in his own locality, his mind will have conceived the true principles of combating them, by leading him to adopt the most successful method of treatment, in short, to excel in certain particulars of practice, that I hold it to be, in all such cases, his duty to record the views he entertains and the method of treatment which the peculiar circumstances of his position may have suggested to him, and which he has thought out and followed up to a remarkably successful issue; as Pope says—

“For the worst avarice is that of sense.”

I verily believe there is no mind so limited or unenlightened from which we may not gather some fruit well worthy to be garnered up in our memories, and I look upon it as a sad pity that there are those amongst us who may very well be called the silent practitioners, who lay up a store of learning and noble thought, who fill their brains with well-selected and useful facts, but for the want of registering them during their acquisition, and recording them for the benefit of their fellow prac-

tioners, they allow them to fade away from their memory like the shadows of a dream.

An additional reason for recording our thoughts is this: when we reflect upon the fact of how short is life, how few are the opportunities that exist for doing good, and that ere long we shall pass to that bourne from whence no traveller returns, is it not, I ask, some consolation to know we leave some traces behind of having at least shown a good intention, through having made an effort to add something to that store of knowledge which makes our fellow men happier by making them wise? But even waiving this view of the question, I hold that the mere act of scrupulously and carefully recording a fact, is fruitful of thought; it trains the mind to arrange one's ideas, and eventually creates an intellectual appetite for what is ennobling and elevated. Reading furnishes the mind only with materials of knowledge, it is thinking that makes what we read our own, and putting on record the result is our duty to fellow man.

“Not to know of things remote, obscure, and subtle,
But to know that which before us lies in daily life, is the prime wisdom.”

The object I have in view in writing this and the following paper is to record a series of impressions which have been made upon my mind by disease, and matured by repeated opportunities during a period of twenty-five years and upwards, in this, one of the largest cities in the kingdom. It is not my intention to detail minutely the nature or theory of any particular disease, or discuss the treatment advocated by various authors, but simply to write in the character of a plain, plodding practitioner, the height of whose ambition is to lay down true and correct principles in endeavouring to understand nature aright, so that I may help her in cases of need and see at a glance what it is she requires, and thereby repress or adjust that which is thwarting her in her delicate and nicely arranged functions, which when in health constitute perfect order—

“First follow nature, and your judgment frame
By her just standard, which is still the same.”

The class of diseases I purpose to discuss in these papers I shall call “acute fever,” or a state of general disturbance and excitement of the respiratory and circulatory systems. Under the above head may be included some of the cases frequently called influenza, congestion of the lungs, bronchitis, pleuritis, pneumonia, &c.

The natural bias of my mind respecting disease I find, instinctively as it were, to be ever approximating to sim-

plicity, and as this class of diseases comes before me more frequently, and forms the greater proportion of my cases, I have selected such for my present purpose out of a miscellaneous number attacking every breed of horse, including several hundred of heavy-draught horses belonging to our largest firms, the majority of them gross, fat, dangerous subjects; and which are being continually replenished with fresh young horses brought straight from the open straw-yards of the breeding counties, and taken at once into town stables, and there fed upon full diet and subjected to town usages. Add to this that this large city is made the central station or depôt, from whence all branch establishments are supplied with seasoned horses. Under these circumstances it will be seen that there is a transition, or a serious and critical change taking place in thus inuring these animals; and whenever active fever or inflammatory disease supervenes, it requires a most discreet and prudent method of treatment to steer the patient safely through. Before railway times, these large cities, which are such great centres of industry, had the above difficulties to contend with, but only in a smaller degree, and I hesitate not to say that the losses to the horse-keeping community in this town alone were at least fifty per cent. more, twenty or thirty years ago, compared with what they are now. Let us next inquire how this great change has been brought about. Has it resulted from profound pharmaceutical and physiological research, which so often seduces the intellect? I think not.

“These leave the sense their learning to display.”

Neither is it attributable to the maintenance of antiquated notions of practice, where the old farrier bled, blistered, and physicked, but all in vain; for when the patient was opened he was pronounced to be “as rotten as a pear.” Thus did he continue

“Bold in the practice of mistaken rules.”

My conviction is, that this change in the order of things is referable to several causes arising out of more enlightened times, viz.—

First. The improved breed of our horses generally, leading to a sounder and healthier class of stock, whereby many of those hereditary predispositions, or unhealthy organizations and consanguinities, have disappeared from among them.

Secondly. The improved stable-management, and the greater care which is exercised in the system of seasoning young horses.

Thirdly. The different method of medical treatment which is now adopted whenever disease makes its appearance.

It is not my province, or even my intention, to dilate to any great extent upon the two former causes of the improved state of things; the *first* is, I think, too self-evident to need a moment's comment, and for this our thanks are due, in a great measure, to the example and also to the impetus which has been given by the different agricultural associations.

The *second* consists very materially in the improved construction of our stables. They are loftier and more roomy, ventilated more in accordance with common-sense rules, and drained more effectually. Besides, more attention is now paid to cleanliness, and also to the temperature of the building. And here let me not forget to mention the important benefit which accrues from the employment of the disinfectant powder of Mr. McDougal. This agent not only destroys the deleterious and noxious emanations which arise, but it tends likewise to lower the temperature in heated stables, and to cause a total absence of flies, thus enabling the horse the better to rest. By the escape of a small proportion of carbolic-acid gas, which is eliminated during the process of its action, it also contributes in some manner to those extremely mystical and delicate conditions of the atmosphere that render it in itself more conducive to health. In reference to this subject, I think I cannot do better than give the *modus operandi* of the agent in the words of the patentee, who has kindly favoured me with the following description:

"The manner in which the chemical condition of the atmosphere is affected, by the use of this disinfecting agent, is both interesting and curious. All our previous notions have been, that a substance to combine with the gases formed during the process of putrefaction was the only thing required; the one in question, however, while it fulfils this condition, is chiefly designed to prevent fermentation and the consequent evolution of gaseous products. When a stable is closed for the night, its occupants may be considered as limited for oxygen for the arterialization of the blood, through the small quantity contained in the air of the stable, with any additions which may be made to it by means of ventilation.

"The deterioration of the air goes on continuously—the animals always *expiring* a smaller quantity of oxygen, and a larger quantity of carbonic acid than was *inspired*—therefore the oxygen becomes *less*, and the carbonic acid *greater*. But the process is greatly increased by another cause—the expired air is always charged with organic matter from the

lungs and stomach of the animal; the insensible perspiration also contributes organic matter, and the dung and urine add still more. All the organic matter from these various sources is in a finely divided state, and highly putrescible. It has an intense affinity for oxygen, and consumes it with great rapidity, lowering still more the vitalizing power of the air. The inspiration of air charged thus with putrescible organic matter, is most unwholesome. It acts detrimentally upon the blood, by preventing its proper oxygenization, and has a tendency to induce inflammatory diseases, especially of the lungs. Its first effects are a sluggish circulation, with low vitality, and a predisposition to epidemics. The agent I speak of acts not merely by preventing the active fermentation of the excreta, but by charging the atmosphere very agreeably with a carbolic odour, which effectually prevents the putrescence of the organic matter with which the atmosphere is charged.

“The theory of ferments is well known, *namely*, how readily a body whose particles are in motion imparts that motion to the particles of another body. It is this tendency which the composition of this agent so effectually prevents.

“I cannot too strongly express my conviction, that in addition to the most scrupulous cleanliness, the daily use of this agent is the best means of preserving the health and working powers of the horse. It does not add oxygen to the air, but it prevents its waste; it does not remove organic matter from the atmosphere, but it arrests its putrefaction, and the evolution of noxious products consequent upon that process.”

The above lucid description I conceive to be full of great truth; and, although the use of this disinfectant cannot carry us scathless through seasons of pestilence, still I verily believe that it will be found to have a powerful effect in moderating the intensity of such diseases, and this, I hold, is no mean desideratum, especially when I remember the extremely artificial circumstances by which the horse is surrounded.

There is likewise more attention paid, in the present day, to good and wholesome food, as well as a greater regularity in the times and method of feeding. The seasoning of a young horse, as well as the importance of exhibiting a gentle purge, and the bringing him by degrees to “town diet” and town work, is not overlooked. Extra care is also taken of him when he returns from work, so as to avoid a chill. When he is brought home in a state of perspiration, attention is paid to his being well wiped, that his legs and ears are rubbed dry, and, if the night is cold, that the water he drinks is rendered tepid; he

has likewise a good bed given him, and is left comfortable in a stable of a proper temperature. The old plan of keeping him stoved up in a hot stable to prevent his taking cold, and giving him quantities of alterative medicine, such as antimony, sulphur, &c., is very properly not now considered essential, or even necessary. Neither is the exhibition of the three physic balls of the old farrier, nor the spring or autumn bleeding, called for. These are notions which, now-a-days, are exploded; and during my daily avocation I find myself, instinctively as it were, gradually narrowing the expedients ordinarily resorted to, for it is an axiom in science that all power to be effective must be concentrated. My method of treatment partakes more of general principles, resulting from observation and experience, which are materially assisted by bringing into my service the sepometer, the thermometer, and hygrometer, the uses and importance of which I shall comment upon in my next paper. Truly may it be said that I burn with admiration as I witness the grand but simple power which we can bring to bear upon disease by attention to these matters.

(*To be continued.*)

ON THE TITLE OF VETERINARY SURGEON.

By ANOTHER "PROVINCIAL."

THE pages of your journal have on several occasions contained some sensible allusions to the title of veterinary surgeon, and to the unfairness with which the title is assumed by the charlatan or quack. We must all regret this, and sigh for a remedy.

But whilst I admit the force of the arguments of your correspondents, "*Fiat Justitia*" and "Provincial," I cannot overlook the fact that many members of our profession condescend to unite with the practice of veterinary medicine and surgery the callings of a horse-breaker, a horse-dealer, or that of a landlord of a fourth- or fifth-rate tavern. It is such amalgamations as these which bring discredit on our profession, and hence it is that a *gentleman* amongst us is the exception and not the rule. And though we complain of so many who, to the great injury of the graduated members of the Royal College of Veterinary Surgeons, usurp the title which exclusively belongs to them, it must be allowed that equal injury and injustice is done to the more respectable

portion of its members by the no small number of "black sheep," who, holding the diploma, disgrace it either by uniting with it the occupations alluded to, or whose conduct is such as to bring odium on the name.

I confess that I would rather have to contend with the self-dubbed veterinary surgeon, even if his claim to that name is no other than that he may have served an apprenticeship as a groom or gardener, than with a man who as a right makes use of the title, but whose associates are those who are characterised by vulgarity and ill-breeding. From the first of these I should suffer least. He cannot long hold his place in opposition to a well-conducted and an educated man—but the latter, taking the advantage of his membership, brings the profession into disrepute. Thus it is, that until the fact is otherwise, and individually established, in the eyes of the world a veterinary surgeon is *not* a gentleman!

"I only speak right on:
I tell you that which you yourselves do know."

* * * * *

"The fault, dear Brutus, is not in our stars,
But in ourselves."

TETANUS IN A MARE, ASSOCIATED WITH THE LARVÆ OF THE ŒSTRUS EQUI WITHIN THE STOMACH AND DUODENUM.

By J. S. WOODS, M.R.C.V.S., Saharunpore Stud Depôt.

IN looking over my "case-book" the other day, I came across the following entry of a case of tetanus, which, although perhaps not a novel one, may still be worth insertion in "our" journal. It occurred at Peshawur, whilst I was with the Artillery there.

January 17th, 1856.—An eight-year old chesnut buggy-mare, the property of Captain T—, H.M.'s 24th Regiment, was admitted into hospital this morning, suffering from tetanus, but from what cause I was not able, after the most minute examination of the animal, and especially of her feet, to ascertain.

The mouth was not quite closed; the pulse full, and but little accelerated. The spasms were most severe about the neck, leading to opisthotonos.

An enema consisting of Acid. Hydrocyanic., fʒiss in a
xxxii.

gallon of tepid water, was injected, and the following drench administered directly afterwards.

℞ Oleum Lini, Oiss;
Ol. Crotonis, gtt. xxx. Fiat haust.

Directions were given for the animal to be well clothed and to be kept perfectly quiet in a loose-box. A sloppy bran mash was placed in the manger and linseed tea within her reach.

18th.—The mare was much the same this morning, and, as the medicine had not acted—

Ol. Lini, Oj;
Ol. Crotonis, gtt. xx;
Ext. Belladonnæ, ʒij,

was administered. Saponaceous enema were thrown up, the hydrocyanic acid not having the desired effect.

Nocte.—Not quite so well; has refused her food during the latter part of the day. The muscles are more rigid and the jaws more firmly closed. The medicine has not yet acted. The fæces are small in quantity, and quite hard.

Repeat enema, and mix Pulv. Crotonis Tiglii Sen., ʒj, with her drinking water.

19th.—Much better this morning. The joints and muscles are more relaxed, but the bowels are not yet open.

℞ Ol. Lini, Oj;
Aloës Bab., ʒj;
Ext. Belladonnæ, ʒij.

The belladonna and aloes to be dissolved in the oil by the means of the water-bath.

Ordered also a tobacco smoke enema to be exhibited, and her diet to be continued as before, with the addition of some finely sliced carrots, as her appetite seems to have improved.

Nocte.—Repeat tobacco enema.

20th.—Not so well. Refuses food. Jaws quite closed. The medicine has not acted even yet. Give Pulv. Crotonis Tig. Sen., ʒj mixed with her drinking water, as before, and throw up tobacco enema three times during the day.

Nocte.—Muscles more rigid; jaws firmly closed. The mare is evidently much worse. No medicine was given, and I contented myself by ordering her to be kept perfectly quiet.

21st.—On going to hospital this morning, I found the mare down, and in strong convulsions. There being no chance of recovery I had her shot, without delay, for humanity's sake.

Autopsy, two hours after death.—The mucous coat of the stomach was perforated in *two places*, as if eaten by young “bots,” several of which existed in the stomach near the pylorus. At the anterior part of the duodenum the canal was completely filled with these parasites. Two or three patches of inflammation of the mucous coat of the stomach were likewise detected. All the other viscera were healthy, with the exception of the liver, which was enlarged and softened—no uncommon thing, however, in this country.

Remarks.—I came to the conclusion, whether rightly so or not, that as no other cause could be detected, the attack of tetanus was caused by the irritation set up by the bots.

I meant to have sent you another case or two, but I am afraid that I am already taking up too much of your valuable space.

My much-respected predecessor, the late Charles Henderson, only left here in November last, consequently I have not been here long; but, during the few months that I have been here, I have seen many curious cases which are never met with in old England. At some future time, if agreeable, I will endeavour to describe some of these diseases.

DEATH OF A COLT FROM ENTOZOA WITHIN THE ABDOMEN, &c.

By JAMES MEYRICK, M.R.C.V.S., Welchpool.

HAVING read in Professor Simonds' introductory lecture an account of a disease among lambs, brought on by the late hot weather, in some of which death was caused by worms in the abomasum, I have thought that the details of a somewhat similar case in the horse might be interesting to your readers.

Towards the end of last month I was sent for to see a yearling colt which had been ill for some days with diarrhoea. He was extremely emaciated, had very little appetite, and looked at his sides occasionally, as if in pain. His faecal evacuations were as thin as water, and smelt very offensively. I gave a mixture of opium, chalk, and ginger; and in a day or two the faeces were almost natural, but still the colt ate but very little, and seemed very weak; he also looked at his sides as much as ever. I now administered some powders composed of sulphate of iron, gentian, and ginger, but

without any good effect. In two or three days from this time the animal died.

On opening the abdomen I found all the organs healthy, excepting the liver, which contained several small tubercles. In the abdomen, however, I discovered a number of worms, which, I presume, are like those described by Professor Simonds as causing the death of the lambs, except that they were from an inch to an inch and a half long. These parasites had burrowed under the peritoneum in several places, and some were even located in the abdominal muscles. Others were adhering to the kidneys, and some to the liver. It required a considerable amount of force to detach them, which I could not account for until I read Professor Simonds' description of the peculiar formation of the heads of those he met with in the abomasum.

In several places on the intestines there were little spots of a dark red colour to be seen, which I believe were the marks left by the worms in boring their way through these viscera.

I could not detect any other manner in which they had entered the abdomen.

I will now explain the way in which, it seems to me, that a long period of hot dry weather operates in producing parasites in animals. It is known that plants of the same species sometimes vary to a certain extent in their chemical composition, according to the food with which they are supplied. Now, when there is no rain for a long period there is little carbonic acid conveyed to the roots of plants, consequently they are deficient in hydro-carbonaceous matter, while the nitrogenous parts are in excess. This being the case, there is a deficiency of the former and an excess of the latter, in the bodies of the animals living upon herbage in this state. The want of sufficient combustible matter causes a low degree of vital heat and vital power, and the nitrogenised substances consequently begin to decompose. The blood being loaded with this decomposed matter, parasites are brought into existence in order to eat it up, just as animalculæ exist in water in order to consume decomposed vegetable substances there existing.

As it is nothing but vitality which prevents the chemical laws from having full sway, it seems possible that when the vital powers are weak the chemical forces may come partially into operation.

[The entozoa found by Mr. Meyrick, in the above case, were most likely strongyles, which parasites not unfrequently

exist upon, as well as beneath the peritoneum, and also within the intestinal canal, &c. When thus located they often produce ascites in young colts, and several such cases are recorded in the annals of veterinary medicine. Their adhesion to the viscera does not depend upon the peculiarly barbed arrangement of the integument near to their heads, as is the case with the *filariæ* found in the abomasum of lambs, but on the development of their sucking-discs.]

POISONING OF A FILLY BY YEW.

By J. E. CORNELIUS, M.R.C.V.S., Shefford, Biggleswade.

I WAS requested yesterday evening, November 2d, to attend a brood mare and three yearlings, the property of Mr. Davis, a large agriculturist, residing near to Biggleswade, in consequence of a two-year old filly having been found dead in the field, in which she had been kept with the other animals, and the owner fearing that he might lose some of them from the same cause. On examination, I could not detect anything amiss with the animals, but I deemed it prudent, nevertheless, to administer a dose of physic to the brood mare. I waited for an hour and a half to see if any indications of ill health would present themselves, but such was not the case. It being now night I returned home without further investigation, and on the next morning I went over again for the purpose of making a *post-mortem* examination. Previous to doing this I walked into the field where the animals were kept, thinking it possible that I might find a vegetable poison of some kind which might have been the cause of death.

I had not much trouble in tracing the animals into an adjoining shrubbery, the gate of which had been accidentally left open; and here their foot-marks were plainly visible around one of the shrubs, of which it was evident some had been eaten. It at once struck me that it was a variety of yew, although I was not sufficiently acquainted with these plants to decide the question forthwith, and I felt the inconvenience of being devoid of a knowledge of botany. By the bye I hope the day is not far distant when botany will be added to the curriculum of the veterinary student's studies.

I subsequently proceeded to make a post-mortem examination, when I found the stomach full of ingesta of a natural

consistency, but covered with much mucus. The lining membrane of the organ was inflamed in patches, and could be easily stripped off from the muscular coat beneath. The cuticular portion of the mucous membrane was healthy, and had a number of bots (the *œstrus hæmorrhoidalis*) adhering firmly to it. On carefully examining the ingesta, I found many leaves which corresponded with those of the shrub.

The duodenum jejunum and rectum appeared to be in a normal condition, but a few patches of inflammation existed in the ilium. The mucous coat of the colon was the most affected, and wherever these patches of inflammation were found the leaves of the shrub could be detected. The mesentery was also inflamed.

I send you small portions of the meso-colon, the colon, and contents of the stomach, and also a twig of the shrub, the leaves of which you will find to correspond with those in the ingesta.

I regret that I had not an opportunity of witnessing any of the symptoms, but I have no doubt that this animal died suddenly, as there were no signs of struggles. The other animals escaped entirely.

I wish particularly to know if the specimens I send are both yew, as I am informed that there are four varieties of the shrub. Should they prove to be so, they are to be destroyed, although they are much valued by the proprietor for their ornamental appearance.

[The specimens of yew sent us by Mr. Cornelius are, the *Taxus baccata* of Lindley, the *T. fastigiata* of Loudon, *T. hibernica* of Hooker, and others. This last appears to have been the poisoning agent. There is, however, little, if any difference, in the effects produced by the varieties of the yew on animals. The leaves are considered the most energetic, but all animals are not affected alike by them. Burnett says that "deer, sheep, and goats feed on them with impunity," nevertheless, when the quantity partaken of by these animals is large, serious results have followed, yet "a very small quantity," he says, "taken as food, will destroy both cows and horses."

The portions of intestines forwarded presented numerous ecchymosed spots, otherwise no abnormal appearance could be detected.

“A BEE STORY.”

Communication from JOSEPH WOODS, Coleshill.

GENTLEMEN,—Among the miscellanea of your last number is an extracted article headed “A Bee Story,” in which it is stated that “no one received any great amount of injury” in the battle between the donkey and the bees.

Now I beg to inform you that the combat proved fatal to poor Jack the same night, between 11 and 12. A lad was sent to me for some medicine about 5 p.m., saying that the donkey had been badly stung, and had been rolling about ever since. Some simple medicine was sent, with orders to let me know how he was in an hour or two. About 8 o'clock I was sent for to see him, when I found him in a very pitiable plight. The pulse was nearly imperceptible at the jaw; membranes highly injected; nostrils expanded; respiration very laborious; body bedewed by cold perspiration, and legs and ears cold. He was also very restless, and kept continually turning round, and crouching as if about to lie down, but apparently afraid to do so. The lips being swelled, I scarified them, and used vinegar and water to the surface of the body. I also gave a mixture of Spr. Æther. Nit. et Extract. Belladonnæ. I however had but faint hopes of his recovery, and told Mr. Percival that I could do no further good. He died the same night, at the time above stated.

To the Editors of the ‘Veterinarian.’

DEATH OF MASTER BUTTERFLY.

THE splendid bull, “Master Butterfly,” died a few weeks ago, on his way from the western district to the Melbourne show. “Master Butterfly” has been two years in the colony and was purchased of Colonel Towneley for 1,200 guineas.—*Melbourne Herald.*

Facts and Observations.

RESEARCHES ON THE DEVELOPMENT AND PROPAGATION OF TRICHOCEPHALUS DISPAR, AND THE ASCARIS LUMBRICOIDES.

By Dr. DAVAIN.

THE conclusions to which these researches lead are :

1. That the ovum of the trichocephalus, and of ascaris, may be developed out of the body of man.

2. That the appearance of the embryo, in both cases, occurs in six or eight months in winter, and in one month, or even less, in summer.

3. That the embryo, shut up in its ovum, may live there for more than a year. In this long interval of time, the ova of trichocephalus and of ascaris lumbricoides can, no doubt, be transported by rivulets into rivers—rivers and wells, the water of which is used as drink or in the preparation of food. These ova, completely developed, can thus be conveyed into the intestine of man, where they attain to adult development.—*Journal de Physiologie.*

NITRATE OF SILVER IN ASCARIDES.

DR. SCHULTZ states that he has employed enemata of this substance with great success for the removal of the *oxyuris vermicularis* which so frequently infests the rectum in such large numbers. The clyster is formed of argent. nitrat. gr. x. ad xv. to aq. dest. ʒiv. Two, or at most three, of these suffice to effect a complete cure. The first one does not usually remain up long, and worms, some living and others dead, are returned with it. The next clyster remains from six to twenty-four hours, and the great mass of the dead worms are discharged with it.—*Deutsche Klinik.*

ORIGIN OF THE ACARUS SCABIEL.

M. DEVERGIE has asserted that the acarus is not always the cause of itch, but sometimes its consequence; there is nothing, he says, which disproves the possibility that the products of secretion, the atmosphere around those affected with itch, their clothes, &c., may give rise to the animal. This assertion has been refuted by M. Piogey, as the results

of his observation, at St. Louis Hospital, of 300 cases:—
 “1. The *acarus* is never a morbid production of the eruption; does not rise spontaneously; it is the sole and necessary cause of itch. 2. The mode of contagion of the *sarcoptes* is invariably the same, when due precaution is taken. 3. The vesicle arises under the influence of local irritation, ordinarily of a bite; other eruptions are merely complications of different forms of the disease, connected with its duration, &c.”—
Medical Times.

PARASITICAL DISEASES OF DOMESTIC FOWLS TRANSMISSIBLE TO SUPERIOR ANIMALS.

MM. REYNAL and Lanquetin lately read before the Academy of Medicine of Paris a paper on the above-mentioned affections. From the authors' researches, they have been able to come to the following conclusions:—1. That hens are liable to a cutaneous affection, depending on a particular kind of *acarus*—the *acarus mutans*. 2. That this affection resembles the itch of man and animals, as regards its symptoms and progress. 3. That it is transmitted from one fowl to another, by cohabitation, through the *acarus mutans*. 4. That it is also transmissible to horses and other domestic animals.—*Lancet*.

REGULATIONS RESPECTING CATTLE EPIDEMICS IN FRANCE.

THE French Minister of Agriculture has recently issued an order that no proprietor of cattle shall henceforth be indemnified for the loss of his animals from epidemic affections, unless he produces a certificate signed by the Prefect of the commune that they were duly attended by an authorised veterinary surgeon.

DR. WARREN'S STYPTIC IN INTERNAL HÆMORRHAGES.

DR. COOK has reported that he had used the styptic recommended by Dr. Warren, of New York, in almost every variety of hæmorrhage, and has hardly known it fail in hæmoptysis or uterine hæmorrhage. It consists of sulphuric acid, ʒv; spt. turpentine et alcohol, ij. The turpentine is slowly mixed with the acid, and, the alcohol having then been added, the mixture is put into a stoppered phial. The dose is 40 drops rubbed up with sugar, and given in a teacupful of water, a second dose being given one hour after the first, and a third two hours after the second.—*New York Journal*.

Extracts from British and Foreign Journals.

REPORTED OUTBREAK OF PLEURO-PNEUMONIA AMONG THE CATTLE IN THE VICINITY OF MELBOURNE, AUSTRALIA.

Extracted from 'The Argus,' Sept. 17th, 1859.

A MEETING of stock-owners was held on September 12th, 1859, at the office of Messrs. Dalmahoy, Campbell and Co., Melbourne, for the purpose of ascertaining the truth of the reported appearance of pleuro-pneumonia amongst cattle in this colony. A committee was appointed to make inquiries on the subject.

"An adjourned meeting of gentlemen interested in the breeding and sale of stock in Victoria was held yesterday, Sept. 16th, at the Port Phillip Farmers' Society's offices, Elizabeth Street, to receive the report of the committee appointed to inquire into the reported appearance of pleuro-pneumonia among cattle, and to collect particulars.

"About twenty-five persons were present, and the chair was occupied by Mr. Rawdon Greene.

"The *Chairman*, after reading the advertisement convening the meeting, called upon the committee to produce their report.

"*Mr. A. Skilling* stated that he and Messrs. Brock and Creighton, in accordance with their instructions, visited, on Wednesday, the places where rumour had assigned the breaking out of pleuro-pneumonia, and to make their report more complete, they had secured the services of Mr. Miscamble, the veterinary surgeon.

"The following report was then handed in :

" ' Having been deputed by the meeting held on the 12th instant, at the office of Dalmahoy, Campbell and Co., to ascertain and report the circumstances connected with the recent appearance in the colony of a fatal disease among cattle, we have to submit the results of our inquiries, and the information and facts which we have been enabled to collect.

" ' As the symptoms of the malady were reported to be precisely similar to those attending the disease well known in the United Kingdom as pleuro-pneumonia, we deemed it a matter of primary importance to have reliable and conclusive evidence on this point, and therefore procured the

services of Mr. Miscamble, who will furnish the results of his examination of the diseased animals. The next most important consideration was, the progress the disease had already made, as a rumour had transpired that it had manifested itself at some considerable distance from the herd originally affected. Our inquiries were, therefore, carefully directed to these points—the identity of the disorder with pleuro-pneumonia, and the *locale* of its appearance—because, taken in connexion, these must materially affect and indicate the preventive or precautionary measures necessary to be adopted. We have, however, furthermore been able to ascertain the history and progress of the disease in the herd (Mr. Boadle's) so seriously affected, and we have every reason to suppose this information will afford a clue to the origin of the distemper in the colony.

“ ‘We, in the first place, proceeded to the neighbourhood in which rumour had assigned the second appearance of the disease, and there ascertained the circumstances which had given rise to the report. These, however, in no way justified the alarm, which may be considered incidental, and attributable to the general feeling of uneasiness in the district, where the fatality in Mr. Boadle's herd was well known. It appears that a cow died on the farm, a distance of eight miles from the diseased herd, two months ago, and a second was ill on the occasion of our visit. This latter animal we saw, and have no hesitation in expressing our conviction that her disorder bears no resemblance to pleuro-pneumonia. The fear, therefore, that the infection had spread to the neighbourhood in question, is at present without foundation.

“ ‘On visiting Mr. Boadle's farm we found that his cattle were divided into two lots—one comprising cattle then in good health, and a second composed of diseased and suspected animals. In the latter there were at the time of our inspection ten beasts in different stages of the disease, and we certainly feel bound to state that even a cursory glance will establish the identity of the malady with pleuro-pneumonia. We had, however, one of the animals slaughtered, but as Mr. Miscamble will more properly describe the *post-mortem* appearances, it is unnecessary for us to refer particularly to the corroborative evidence thereby afforded, further than to state that the left lung was a mass of putrid matter, and that the inflammation also extended to the right lung.

“ ‘To Mr. Boadle we are indebted for the following history of the attack, and the circumstances connected therewith. The first case occurred in an *imported* cow, landed in

good condition, and giving milk. She was attacked, and died in November last, *six weeks after arrival*. Two others died in the latter end of December and beginning of January, and from that to the present time, with only one slight intermission of a month, the ravages of the disease have been incessant. The cattle have been attacked indiscriminately; young and old, milking cows, calves, and working bullocks have been alike liable to be seized.

“ ‘While on this point, we deem it important to note that three lots of cattle purchased at different times and places, and introduced on the farm since the first outbreak of the distemper, have contributed a proportionate number to the total cases which have occurred; and, furthermore, that of five animals imported by Mr. Boadle, two have died, a third is at present recovering from the attack, a fourth has seemingly recovered, and the fifth has hitherto escaped the distemper.

“ ‘The total number of deaths have been twenty-three; five beasts have recovered, but are evidently unsound; and on the occasion of our inspection, ten were ill, of which four were slaughtered at our request for dissection.

“ ‘Mr. Boadle had the services of a veterinary surgeon, and, in addition to curative, had preventive measures adopted such as physicking, rowelling, &c., but with no apparent advantage, as the beasts we saw ill bore the traces of the precautionary treatment.

“ ‘We have now to notice a circumstance calculated to assure the public, while it will prompt and incite to immediate and effective measures. Mr. Boadle’s farm is divided by the main road; the home farm, on which the disease first appeared, is on the one side and a large paddock on the other. The cattle in the latter have been kept from mingling with those on the home farm, and have not in any instance been attacked, whilst, as previously alluded to, the animals purchased and introduced on the home farm have contributed their quota of fatal cases. Furthermore, the neighbouring proprietors have not had a solitary case, Mr. Boadle having given them a timely caution, and we therefore feel perfectly justified in the conclusion that the actual visitation of pleuro-pneumonia is at present confined to Mr. Boadle’s stock and farm. We have made the most minute inquiries on the subject, and have had every assistance and facility afforded us in our inquiries in the neighbourhood on this important point, and must therefore have ascertained the fact had the disease manifested itself elsewhere. We therefore feel assured that at the period of our inspection it had not spread.

“ ‘In justice to Mr. Boadle, we feel called upon to state that we attribute this hopeful feature of the case to the course he has pursued in reference to his herd. His neighbours were cautioned, and the greatest precautions were used to prevent contact or admixture. Had a mercenary course been pursued, the stock sold and dispersed, the results must have, long ere this, seriously affected the colony at large.

“ ‘A. W. V. BROCK.

“ ‘TIMOTHY CREIGHTON.

“ ‘ARTHUR J. C. SKILLING.’

“ *Mr. Miscamble* being called upon, stated that there was in his mind no doubt whatever about the disease amongst Mr. Boadle’s cattle being the much-dreaded pleuro-pneumonia. He, with the gentlemen forming the committee, took one of the worst cases on the farm, and another which was considered to have been cured, and Mr. Boadle allowed the animals to be slaughtered at their request. He (*Mr. Miscamble*) found in the first beast that the left lung was hepatised, or solidified, and covered with adhesive lymph, which fixed it to the chest. He also found two gallons of serum in the cavity, and one of the lungs firmly fixed to the diaphragm. The serous membranes generally were also considerably affected. In the animal supposed to have been cured, there were tubercles in several clusters lining both sides of the chest, and in the superior mediastinum a large tumour full of curded lymph, which seemed to have existed a considerable time, as the walls of the abscess were quite tough. He had brought samples, both of the acute and chronic condition of the lung, and had no doubt whatever as to the nature of the disease, or as to its origin, which was certainly attributable to the fact, that an imported heifer suffering from the malady had been introduced into the herd of Mr. Boadle.

“ The *Chairman* thought that after the very clear statements which had been made, prompt action should be taken to prevent the disease spreading. He might mention, that in the course of one of his importations of cows and horses from England, one cow died of pleuro-pneumonia before being shipped, and four horses died on board of the same disease. Three of them died in two days, and one in three. In the latter case the lungs were completely absorbed, and the cavity of the chest contained one mass of corruption.

“ *Mr. Miscamble* thought the disease was only met with in cows, and not in horses. The seat of disease might be the same, and yet the disease be widely different.

"*Mr. Brock* then read a note from *Mr. Wragge*, veterinary surgeon, stating, in reply to a telegram which he had received, that, if possible, he would be down to attend the meeting.

"*Mr. Miscamble*, in reply to the chairman, said he had no doubt whatever about the disease on *Mr. Boadle's* farm being contagious.

"*Mr. A. Skilling* informed the meeting that there were fifty-one head of cattle on *Mr. Boadle's* home farm, four of which had been slaughtered.

"The *Chairman* was prepared to hear any practical suggestion for the obliteration of the disease in the colony.

"*Mr. Brock* thought if the specimens *Mr. Miscamble* had spoken of were exhibited, there would be no mistaking the disease for the future.

[Two pieces of lung were accordingly placed upon the table, one of them extremely heavy, quite solidified, and impervious to air; also bearing marks on the pleura of recent adhesion, and other morbid appearances. The second, a small portion of the animal's lung, supposed to be cured, was normal, only that a tubercle had been formed, which was appended to the general mass.]

"*Mr. Miscamble*, in answer to a question, said that the disease seemed to attack fat and lean cattle alike. The first beast slaughtered was in excellent condition.

"*Mr. D'Arcy* said pleuro-pneumonia was very different to the Cumberland disease, which only affected the spleen, and the reason of its fatal character had puzzled both medical and practical men, as it was known that an animal could exist without a spleen.

"*Mr. M'Cracken* then moved the following resolution:

"That on hearing the reports of the committee and of the veterinary surgeon appointed to inspect the diseased herd, it is the opinion of this meeting that the disease in question is contagious pleuro-pneumonia, and that at present it exists on *Mr. Boadle's* farm."

"*Mr. T. Skilling* seconded the resolution, stating that, from his acquaintance with the disease in the old country, he had no doubt whatever about that on *Mr. Boadle's* farm being the same.

"*Mr. Shaw* (who had just entered the room) said that, while he was satisfied from the appearance of the lung exhibited, that the animal from which it was taken was suffering from pleuro-pneumonia, there was no proof that the disease was contagious, or that the cases mentioned were more than isolated instances.

The *Chairman* said, if Mr. Shaw would take the trouble to read the report, he would find that strange cattle contracted the disease.

“*Mr. Shaw* thought that very thing proved his position. The farm appeared to possess certain peculiarities for engendering disease.

“The *Chairman* informed Mr. Shaw that Mr. Boadle’s farm had been occupied for twenty years, and that not a single instance of pleuro-pneumonia had occurred either there or, to his knowledge, in any part of the colony, until an imported cow brought it with her, and infected other animals.

“*Mr. Shaw* was still of opinion that the origin of the disease was to be found either in the gases exhaled, the particular food of which the cattle partook, or in some refuse about the farm.

“*Mr. Miscamble* said the farm was situated in an elevated position, that the grass was growing all over it beautifully, and that there was no putrid matter nor any refuse about the place. The cattle, too, were all out in the paddock, except, perhaps, one or two, which were under treatment.

“*Mr. Shaw*.—How near were Mr. Boadle’s to any other cattle?

“*Mr. Miscamble*.—There was only a post and rail fence between them.

“*Mr. Shaw*.—Then, if the disease were contagious, surely a fence would not act as a preventive in regard to the neighbour’s cattle.

“*Mr. Creighton*, as occupying a neighbouring farm to Mr. Boadle’s, wished to state that Mr. Boadle had given all the farmers round early notice of the disease, and had kept his cattle away from the fence.

“*Mr. Shaw* still seemed sceptical, but, though pressed, declined to propose an amendment.

“*Mr. Brock* then explained that, in October last, Mr. Boadle discovered symptoms of pleuro-pneumonia in a cow which he had imported from England, and consulted him (Mr. Brock) on the subject. He recommended that Mr. Wragge should be called in—a gentleman not long from England, and reputed to be familiar with the disease. He was not aware, then, that Mr. Miscamble was so well acquainted with the malady. The cow died, and upon being opened, displayed unmistakable signs of pleuro-pneumonia, the old disease which he (Mr. Brock) had studied under Professor Dick, of Edinburgh. In the cow he also found traces of a recent attack of the disease. There were adhesions and

coagulated lymph, in some of the cells amounting to half a pint. He advised Mr. Boadle to bury the beast, which was done. In three weeks after, another animal was seized with the same symptoms, and then a third. He regretted that Mr. Wragge was absent, as he had treated the affected animals, and could have given more information on the subject. At the same time, in his mind there was no doubt about the disease.

“The *Chairman* then put the resolution, which was carried unanimously.

“*Mr. Stevens* moved, and *Mr. J. Thom* seconded the next resolution, which was as follows :

“ ‘That as the disease called pleuro-pneumonia, if allowed to spread, will be very disastrous to the colony, this meeting is of opinion that Mr. Boadle’s cattle should be purchased, for the purpose of being destroyed ; that a committee should be appointed to collect subscriptions to reimburse him, and see that the cattle are destroyed, with as little delay as possible.’ ”

“*Mr. Pottie*, a gentleman lately from Scotland, at the request of the meeting gave the following information relative to pleuro-pneumonia. After stating that being *en route* for Sydney, he had only delayed his departure in order to be present at the meeting, he said that for many years he had been connected with the Highland and Agricultural Society of Scotland, and had many opportunities of witnessing and studying the terrible malady called pleuro-pneumonia, which devastated a large portion of Great Britain. With reference to the morbid specimen upon the table, he entire coincided with Mr. Miscamble’s diagnosis. Besides pleuro-pneumonia, however, there was another disease in one of them, viz., tuberculosis. After a few remarks upon the difference between contagion and infection, he said that any one who had seen anything of the disease, knew that it was communicable from one animal to another ; but it was not yet demonstrated whether it was contagious or infectious, or both. For his part, he thought it was both, for he found that when cattle passed through a number of hands, the disease was most prevalent, and committed the greatest ravages. It was not difficult to tell by auscultation whether a beast afflicted with pleuro-pneumonia would recover or not. Percussion, too, was a good index. If a slight whistling sound was heard on applying the ear to the chest, the animal might recover. When that sound was absent, certain death ensued. Cows in calf were the least likely to recover. On one farm, where four cows took the disease in the first instance, three fourths of the herd died. On another of two cows, purchased

at some distance, one was taken with the malady three months after its arrival in the place. Upon inquiry, it was found that pleuro-pneumonia existed where the animal was brought from. On that farm nearly all the cattle were carried off. In another instance, which had also come under his own observation, cows which previously had no symptom of disease, and had been upon the place for many months, became suddenly affected. An investigation which was made pointed at a milkmaid who had come from a farm where the disease was raging. That girl had a sister resident upon the infected farm, whom she was in the habit of meeting. The disease, therefore, being so easily communicable, he (Mr. Pottie) thought very strict laws ought to be imposed. He would recommend that, besides acting stringently with farms where the disease was known to exist, that no shifting of cattle should take place without a clean bill of health of some months was given; also, that some qualified person should examine all imported cattle, which should not be landed unless a certificate of health were given, and also one presented to the officer, certifying that they had not been diseased for six months before embarkation.

“*Mr. McCracken* asked whether horses were affected by the disease?

“*Mr. Pottie* thought that, although they were subject, when put on board ship, to inflammatory fever, sometimes attacking the feet and sometimes the lungs, horses did not have contagious pleuro-pneumonia. The disease was more likely to be congestion of the lungs, and he thought the horses the chairman had spoken of died of that. Inflammatory fever always attacked horses in their weakest part, which was not seldom the lungs.

[*Mr. Pottie's* remarks met with considerable applause.]

“*The Chairman*, after being informed that *Mr. Boadle* was willing to abide by any resolution which the meeting might arrive at, stated it as his opinion that a Bill ought to be brought into the Legislature as soon as possible, something similar to the Scab Act. He had been a considerable sufferer from the scab in sheep, and had at one time great cause to regret that the Sydney law was not in force, which ordered that diseased sheep should be immediately destroyed, and 4s. a head paid to their owners. He remembered a man buying scabby sheep at Ballarat, and driving them 100 miles up the Wimmera, a proceeding which cost the settlers in the district, and he was one, about £10,000, their sheep becoming infected, and deteriorating in value 10s. per head.

“*Mr. Miscamble* thought the infected herd should be burnt

root and branch. There was plenty of timber about Mr. Boadle's farm, and the thing could be done quickly, and the sooner the better for the colony.

"Mr. A. Skilling thought it ought to be recorded that the reason why the disease was confined to Mr. Boadle's farm was attributable mainly to the precautionary measures taken by that gentleman, who, instead of disposing of his cattle at market—and many of them would have fetched twenty guineas—had warned all his neighbours of the existence of the malady, and was constantly having men riding round the paddocks to keep the cattle away from the fence.

"The following gentlemen were appointed as a committee to carry the above resolution into effect: Messrs. Mickle, Neil Black, A. Brock, P. M'Cracken, T. Creighton, Kissock, Bloxham, R. F. Greene, and T. Skilling, with power to add to their number."

ON THE ABSORPTION OF ARSENIC BY PLANTS.

By E. S. KENSINGTON, F.C.S., F.R.A.S., Dartmouth.

THE statements of Dr. Edmund Davy (*vide Veterinarian*, p. 657, *et seq.*), to the effect that certain pea plants which he had watered with a cold saturated solution of arsenious acid, not only absorbed the poison, but actually thrived in it, came to perfection, and matured seeds, in which and in every other portion of the plants, arsenic could be readily detected, were, as you justly observed, of so startling a nature, that I was induced at once to make a few experiments on this subject, the results of which I now beg to lay before you. The late period of the season prevented my trying upon peas, but in default of these I transplanted two brocoli plants, two cabbage plants, and four lettuces, into six separate pots, and sowed in two other pots seeds of mustard and cress, and allowed several days to elapse, in fact until the seeds had germinated. I then watered all these various plants with a saturated solution of arsenious acid (made with cold water), and after about eight hours the plants all dropped their leaves, though care was taken not to touch the leaves with the solution. On the second day I did not water them, but they did not seem to recover at all. On the third day a second dose was given them, and on the fourth day all the plants were quite dead, and the mustard and cress (which had already sprouted) had shared the same fate. I next

watered a small piece of grass and that died also, and the shoots of a rose-bush, which I dipped into the same solution, soon turned black, and at the end of two days was completely withered. These results being apparently quite opposed to the statement of Dr. Davy, I thought that it might be objected that the plants had not been transplanted long enough to afford a fair trial. I therefore watered with the same solution a brocoli plant which was growing in the garden very luxuriantly, perhaps a foot high, and very strong. This was watered on the 17th Sept., and after ten hours it shared the same fate as the other plants. I continued to water this plant every other day, and on the sixth day very little of the plant was remaining. It appeared, as it were, burnt up, a section of the stem presenting a black morbid appearance. My next experiment was on three other brocoli plants growing in the same piece of ground as the one just mentioned, and planted at the same time, and these I watered with solutions of different strengths. No. 1 was watered with a solution made of 30 grains of arsenic and 60 oz. of water, and this solution was divided into six parts, and one part given every other day to the roots of the plant. No. 2 was treated with a solution made of 15 grains of arsenic and 60 oz. of water; and this also was divided into six portions as in the first case. In No. 3, a very dilute solution of $7\frac{1}{2}$ grains of arsenic to 60 oz. of water was applied. I consider, therefore, that No. 1 had 30 grains of arsenic, No. 2, 15 grains, and No. 3, $7\frac{1}{2}$, applied to their roots; and this I thought would be amply sufficient for the detection of arsenic if absorbed by them at all. The plants continued to look healthy, and as no sign of their having been poisoned was visible, I cut them off just above the ground, and examined them chemically for arsenic. A section of the stem showed nothing uncommon, and after a very careful examination I failed to detect any trace of arsenic in either of these three plants. Under these circumstances, I cannot help doubting very much the correctness of the statement that plants will absorb arsenic at all; and even if they could, I see no ground for apprehension that they could derive it in any quantity worth noticing from any of the superphosphates now in general use; and I am greatly confirmed in this view of the case by the interesting and able remarks, by Mr. Sibson, in your last week's paper, to the same effect.—*Gardeners' Chronicle*, October 3.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

Journal des Vétérinaires du Midi, for July, 1859.

SPRAIN OF THE FLEXOR TENDONS.

CLINIC AT THE VETERINARY SCHOOL OF TOULOUSE.

By M. SERRES, Chef de la Clinique.

THIS injury is of frequent occurrence among horses which are employed in drawing heavy loads, and also among those that are used for quick work. When a horse has sprained his tendon, a swelling appears along its course, and the part is hot and painful. It is also accompanied with more or less lameness. The affection does not yield very readily to treatment, and there is ever afterwards a great tendency to a relapse. When the thickening of the tendon persists, and which is frequently the case when the animal is continued in his work, the tendons insensibly contract, and often to such an extent that the horse knuckles over in progression—*id est*, the front of the fetlock touches the ground. In this case the horse is next to useless.

The treatment varies with the period of existence of the malady. In the beginning, means should be employed for the purpose of obtaining "resolution." Refrigerants are the best agents, and emollients should not be resorted to unless great pain is present. If the sprain has existed for some time, revulsives are indicated. Firing has been had recourse to, but the result of this has been to hasten the contraction. It is almost needless to remark that rest is indispensable during the acute period of the disease. In cases where the animal is compelled to continue at work, it will be necessary as well as beneficial to modify the shoeing, by elevating the heels and shortening the toes. When these remedies are powerless for good, tenotomy must be resorted to. But this operation should not be performed unless all the symptoms of inflammation have disappeared, and the contraction is complete. The slightest tenderness evinced on pressure of the parts, is a counter-indication to the operation. We will say nothing

of the *modus operandi*, as it is sufficiently well known. The division of one, or both tendons, must depend on the lesion ; and of the propriety of this the operator must be allowed to judge. The indications of the necessity of a division of the suspensory ligament will be shown, when the straightening of the limb does not follow the section of both tendons ; but it may be done without inconvenience or danger. From thirty to forty days are required for the union of the tendons after the section. There are often relapses, which are more frequent in the fore legs ; and taking this into consideration, and also the little value of the horse, it will perhaps be best to render the animal useful by modifying the shoeing.

CANKER OF THE FOOT.

THE means adopted to cure this affection of the foot are various. They consist principally in the use of acids and other astringents, with tar, &c. These are all useful in certain stages of the affection, but great care must likewise be taken in removing the parts of the hoof which are detached by the inroads of the disease. Regular pressure must also be given.

The *modus facienda* consists of removing with the knife all the diseased parts without injury to the healthy structures, and without making them bleed ; after which a judicious dressing, with regular pressure, is called for. This should be frequently renewed and always with great care, particularly in removing the eschar which has been formed, by slightly scraping it without injury to the tissues. This is the great secret for the cure of this tedious affection. How often has it occurred that one injudicious dressing has aggravated the disease to an extent almost to render it beyond recovery ? When the fungoid growths are very great, and the frog has acquired a considerable size, there should be no hesitation in removing it with the knife, so as to reduce it to its normal size as nearly as possible. If the malady has arrived at the second or third stage, and if more than one foot is attacked at the same time, setons should be inserted and diuretics administered.

ABDOMINAL HERNIA.

MORE than once has the good result of pressure in cases of abdominal hernia been recorded in this journal ; but there

is at times great difficulty in the application of it. On the 8th of October, 1858, an aged mare belonging to the 'Diligence' service was sent to the school. She had a tumour of considerable size in the lower part of the abdomen, close to the mammary gland. The animal had received a kick in the stable. She had had a slight attack of symptomatic fever, with loss of appetite, for a couple of days; after which she seemed to be again in her usual health, with the exception of the tumour, which still remained.

On examination the tumour was found to be reducible, and an opening was felt in the abdominal muscles. From these symptoms, and the information obtained, there could be no doubt of the case being one of abdominal hernia, and of its having been caused by a contusion, followed by a rent of the parietes of the abdomen.

This being the diagnosis, the indication of cure consisted in reducing the herniated viscera, thus facilitating the union of the parts, which had given passage to the intestines. To obtain this end a bandage was made of three rollers sown together, and lined with strong linen, on which a pad was fixed so as to compress the tumour.* This apparatus was buckled over the loins, and to it were attached two bands, which, after being crossed under the tail, were passed between the legs and again attached to the apparatus, thus keeping it in its proper place. The parts were also kept wet with an astringent lotion. Two days after, the tumour had decreased in size, but still existed towards the mammæ. A pad was therefore made to be applied to this part, which was not done without some difficulty, and only after several fruitless attempts, on account of the irregularity of the region.

On the 28th the animal had some difficulty in voiding her fæces, which was relieved by clysters made of a decoction of linseed, daily administered.

On the 30th it was perceived that the hernia remained stationary, when an iron plate, having the form of an open hand, was applied to maintain the pad in its proper position. Three days after, the whole of the apparatus was removed, and it was found that the hernia was reduced; and no part of the intestines could be felt. The bandage was again applied as a precautionary measure for a few days, when the mare was discharged cured.

* [I have witnessed a case in the practice of Mr. Braby, which was cured by the same means, *i. e.*, by joining the rollers together, and fixing a pad.—TRANSLATOR.]

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

The Gentleman's Stable Manual; or, a Treatise on the Construction of the Stable. Also on the feeding and grooming of horses; the hygienic treatment of the sick horse; on shoeing; on the management of the hunter; and on equine diseases, with the most scientific modes of treatment. By WILLIAM HAYCOCK, V.S., and M.R.C.V.S. Illustrated with highly finished wood engravings. London: ROUTLEDGE, WARNES, and ROUTLEDGE, Farringdon Street, 1859, p. 528.

WE have given the title in full of this work, so that our readers may see the wide field it embraces, and be induced to read it for themselves, since our review of it must necessarily be a limited one.

We are told by Mr. Haycock, that since the publication of his first treatise on the diseases and medical treatment of the horse—reviewed by us in a previous number—he has, on many occasions, received letters from numerous gentlemen desiring him to write on the proper construction of the stable, and on the superintendence and general management of the horse. Further, that “this book has been written from a strong conviction that it is wanted. A plain, useful work, upon Veterinary Hygiène, and the practice of Veterinary Medicine—one that should be scientific, without any parade of science on the part of the author—one that should be in accordance with the advanced spirit of scientific research so characteristic of the age—has long been required.”

Now, so far from objecting to all this, we hail it as promoting the advancement of veterinary science; for we have before declared ourselves not to be of those who think that the best interests of the members of the profession lie in the propagation of diseases, or fostering the causes of their outbreak, but rather in their prevention by the adoption of those

measures which the laws of science alone point out. It is true that an acquaintance with these calls for a knowledge of the principles of hygiene and natural philosophy, and that to a greater extent, perhaps, than has yet been thought necessary ; but it is the inculcation of this knowledge that will be sure to make the veterinary surgeon a more highly educated man, and consequently one more earnestly sought for by the public. Need we add that, especially is that division of natural philosophy, designated chemistry, brought into requisition here? Thus although we know nothing of the nature of malaria, the fruitful source of so many diseases, beyond its being the result of changes induced in organic matter by the conjoint agency of heat and moisture ; yet we do know that when animals are congregated together, chemical changes occur in the atmosphere they breathe, to which must be added the pernicious compounds that result from the decomposition of their excreta, and which being inhaled, give rise to affections of the lungs, skin, and other organs, through an empoisoned state of the blood being induced by the absorption of these mephitic emanations. To guard against this, ventilation is demanded. Now how could this be effectually accomplished, or proper means be devised for the purpose, without some familiarity with aëro-dynamics, and the laws that govern the diffusion of gases?

Respecting this, Mr. Haycock says—

“In treating upon the ventilation of the Stable, it is taken for granted that every thinking person must be perfectly aware of the necessity for a regular and copious supply of pure air, for the maintenance of the health not only of ourselves, but of the lower animals also. This, although admitted as a fact, and not unfrequently theorized upon, is yet very far from being adopted in practice to the extent which might be anticipated. People continue to build dwelling houses for themselves, and stables for their horses, as though totally unconscious that those destined to live within them will require such a very necessary element as air. The capacity of the lungs of the horse is enormous. He requires a large amount of pure air to thoroughly purify the blood. Bad ventilation is the cause of innumerable diseases ; and where it does not directly cause disease, if a diseased animal be subjected for any length of time to its deleterious influence, matters become worse, and serious aggravations of the malady result. Glanders, one of the most loathsome, infectious, and incurable forms of disease to which the horse is subject, very frequently arises from bad ventilation. Horses when on shipboard, have become glandered from simply shutting down the hatchways during the prevalence of a storm. Epidemic Catarrh, is another form of disease

familiar to most men who own horses. Glanders is a common sequence to this malady; and the same may be said of Scarlatina, Typhoid Pneumonia, and Coughs of a very obstinate nature. Such sequences, however, are not common except in stables that are badly ventilated. No surer indication, in a general way, of a badly ventilated stable, than where scarlatina readily supervenes upon catarrh, or where obstinate coughs remain after its inmates have suffered from the epidemic forms of the disease. Another sign,—a sign alike indicative of uncleanness and bad ventilation,—is where the paint upon the woodwork of the stable, takes on a dull leaden colour. This is a common effect, and one readily seen by an observer.

“BEST MODE TO OBTAIN THOROUGH VENTILATION. By thorough ventilation is meant, *a constant supply of pure air, in quantity sufficient to disperse that which is impure in any apartment into which it may be admitted, and in which gases are generated unfit for the healthy maintenance of life.*

“Several modes are in use by which air is admitted into stables to effect this purpose: sometimes it is done by a moveable trellice fixed in the lower half of the window—sometimes by openings cut through the wall either in front of, or behind the horses. In short, it is sought to be done by any mode or contrivance, just as chance may hit upon, or necessity at the moment may devise. We cannot ventilate an apartment without the admission of air. The difficulty is, to admit the air in a manner which will not prove objectionable. Cold draughts are very objectionable. The supply of air within the stable should be regularly and equally distributed. A very excellent plan to effect this is pursued by Mr. Watson, of Halifax. This gentleman, by his process, has ventilated numbers of stables, many of which I know where the mode in question answers admirably. The plan he adopts is at once simple and complete. It mainly consists of a large tube, which is equally divided within, from top to bottom. This tube descends from above the roof, down through the floor or ceiling of the stable; at the bottom of the tube, two trap doors are secured by hinges to the central division. The doors are constructed to move by the aid of cords and pulleys, and being opened either wholly or in part, a double current of air is established; or in other words, the bad air is made to ascend and depart, at the same moment the pure air descends, and diffuses itself through the stable. Thus a gentle, but perfect interchange of good and bad air is effected. The expense attending the fixing of Mr. Watson’s apparatus is not excessive; and where a permanent improvement of the kind is necessary, and about to be effected, perhaps his plan will be the best to adopt. It is also to be strongly recommended on another account, that it does not readily work out of repair.

If the premises are favorably situate, good ventilation may be effected by the following mode, one equally simple as that above recommended. Make an opening ten inches square through the wall in front of the heads of the inmates. Make it behind the woodwork dividing the hay-racks from one another, or immediately behind where the divisions of the stalls commence. One opening in the position named, and of the size specified, will be sufficient to afford air for a single horse. To modify the current, and prevent the entrance of foreign bodies from without, place an iron grate against the outside of the opening. Where it is impracticable to cut through in the manner directed, the difficulty may be obviated by carrying tubes made of iron or wood, through the roof, taking care to cover the upper opening of the tube with perforated caps. A corresponding number of openings of the same size are next to be

made through the wall *behind* the horses. These openings must be cut within a few inches of the ground, and protected by grates fixed on the outside, as directed above. Each opening must terminate in a square tube placed within the stable. Each tube must be five feet high, having an upright position, and secured to the wall by means of holdfasts. They should be five or six inches square, having three sides of wood, the fourth being formed by the wall against which they are fixed. On the top of every tube, fix a thick plate of zinc, well perforated with small holes. Should these tubes admit more air into the stable than requisite, slides of wood may be inserted in place of the perforated plates, and the air currents checked either wholly or in part. The above is a very excellent plan to ventilate a stable; but stablemen require watching, or many of them, unless prevented, will keep the tubes permanently closed. They want a close stable, and they cannot be prevailed upon to adopt any other method."

In intimate relation with the above, and possibly one of the greatest causes of its necessity, is the **DRAINAGE OF THE STABLE**. In reference to which our author states—

"A stable to be free from bad smells arising from the decomposition of urine, and other offensive matters, must not only be thoroughly ventilated, but thoroughly drained also, and the drainage conducted to some distance from the premises. I have elsewhere described the position of the various surface channels, for conducting the urine into the underground drain. Below the main surface channel, and in a line parallel with it, place the underground drain. Joint and socket pipes are the best for small drains. Care must be taken in putting down the pipes, to ascertain that they are evenly placed, that the joints are well cemented, and that a sufficient fall be given to allow the urine to run freely away. Wherever the urine passes into the underground drain, let it do so by means of a trap. Traps of the proper kind can be procured from those who supply the joint and socket pipes. Traps have a twofold use; they prevent any back stench which may arise, and they prevent rats from attempting to enter the stable through the urine grates, or where the traps may be fixed. All the openings leading from the surface channels into the underground drain should be covered with suitable grates.

"The underground drain should terminate in a tank, if it be desirable to preserve the urine for manure. The loss of manure arising from the want of tanks is incredible. Possibly a time may come when people will look to these matters somewhat differently."

There is much under the head of the "Hygienic treatment of the sick horse" that we concur with.

"One of the most important matters in the treatment of animals when diseased, especially during the period of convalescence or recovery, is their hygienic or dietetic management. It is a species of knowledge indispensable to veterinary surgeons; and yet from the false views which are generally entertained not only by the medical profession at large, but also by the majority of all classes with regard to the power of the vital force to rectify the organism when diseased, hygienic treatment in relation to the state in question, has not received a tithe of that attention which it merits. So long indeed, as it continues an article of belief

that physic cures disease, so long will those who practise the healing art refrain from the study of hygiene, and of the healing power of the vital force ; both of which are to be considered as holding an inseparable relation to each other.

“The only power which cures disease *is the vital power* ; and the utmost which medicine can do,—and I at once admit that it is a great deal,—is, by its action, to so influence the curative power, or in other words, so direct or control it, as to place the part diseased under the most favorable conditions inservient to recovery. Until veterinary surgeons acquire a correct knowledge as to what is the real curative power in disease, and treat their patients in accordance with such knowledge, it is hopeless to expect a more rational system of therapeutics than what at present prevails.

“The relation which hygiene holds to the vital power, is too obvious to require explanation. Hygienic treatment, is simply food treatment. Unless food of a proper kind, and in proper quantities, be supplied to the organism, it is a fact known to every one that the vital force will speedily cease to act.

“During the existence of acute disease, hygiene can only be regarded as holding a subordinate position with respect to any direct influence which it may exert upon the curative power of the organism ; but when recovery becomes fairly established, or where the animal is debilitated, or threatened with disease, no matter from what causes, it is to all intents and purposes the principal ground upon which the veterinary surgeon must base his hopes of a result favorable to his patient.

“The duties comprised in, and related to hygienic treatment may be arranged under the three following heads :

“ I.—Housing.

“ II.—Dieting.

“ III.—Clothing the Patient.

“These will be found to include all that is necessary in this department of our treatise.”

These heads being severally dwelt upon, we are brought to the *second* part of the work, which treats of the diseases of the horse, and on certain generalities in connexion with their treatment.

In looking over this, while we find much to commend—much that gives proof of the exercise of thought, of observation, and an independent mind—there is much that does not accord with our views of medicine, simply because it is based upon the *principles* of homœopathy, at least so far as the agents employed are concerned. We must, however, confess that we perceive some deviations from the doctrine of Hahnemann. For instance, we notice more than once, that Barbadoes aloes is directed to be given in such doses as would not be exceeded by the most confirmed allopathist. From four to six drachms constitute, we are rightly told, the ordi-

nary quantity for a purgative ; and sometimes an ounce is directed to be exhibited in solution, as in *gastritis*. And “should this fail to produce a free action of the bowels within twelve or fourteen hours after being given, administer a second draught, containing half the quantity of aloes.” To this is judiciously added—“Purgation will be hastened by giving the patient from a pint to a quart of tepid water every hour.” Again, bleeding is recommended in several places, and this is regarded with horror by a true homœopathist. We likewise need hardly add that the doses of the therapeutic substances are much larger than those usually advocated for the human subject.

In proof of what we have just advanced, we will make a few extracts from the *treatment* of two or three diseases, selecting those which more commonly come under the notice of the veterinary surgeon, and adverting only to the remedies, so that our professional brethren may judge for themselves.

Epizootic Catarrh, or Influenza.

“The best remedies in general, for maladies of this nature, are—Belladonna, Mercurius 2, Hepar Sulph. 3, Rhus Toxicodendron 1, Arsenicum 3, Camphor, Aromatic Ammonia, Tinct. Ferri Murias, Poultices, Blisters, and Fomentations.

“Belladonna, Mercurius, Hepar Sulph., and Rhus Toxicodendron, are valuable remedies to relieve the soreness of the throat. Sometimes the administration of Belladonna and Mercurius in alternation will speedily remove it ; while, in other cases, the Hepar or the Rhus are necessary.

“Give the Belladonna and the Mercurius alternately, three or four times a day : the former in 2-drachm doses mixed with water ; and the latter (of the second trituration) in drachm doses mixed with flour.”

Enteritis.

“The best remedies against Enteritis in general, are—Aconite 1, Arsenicum 2, Bryonia 1, Rhus Toxicodendron 1, and Hot Water. After detailing the common principles with reference to the application of these medicines in Enteritis, I shall proceed to discuss the questions of bleeding, and the use of sedatives in this disease.”

Referring to *bleeding*, *sedatives*, and *purgatives*, in enteritis, Mr. Haycock says—and here we come to that which appears to us to be, and most certainly is, anti-homœopathic practice—

“Having detailed the modes of cure which I generally pursue with those cases of Enteritis intrusted to my care, I pass to the consideration

of the propriety of Bleeding, and the administration of Sedatives and Purgatives.

“Bleeding, accompanied by the use of Sedatives, for the cure of this disease, are practices which have the assent of ages; the question, therefore, very naturally arises—is it necessary to have recourse to either one or the other? My reply is (and I write from experience of an extensive kind), that at times, and under circumstances of a peculiar nature, both will be found of value; but the difficulties are in learning to know the times and circumstances which warrant the veterinary surgeon in resorting to their aid. To do so at the very commencement of the disease I have clearly shown to be bad practice. Let us endeavour to ascertain what condition of the patient will indicate to us the necessity for their use.

“During the continuance of the disease I carefully observe the pulse. At the onset it is always depressed, and somewhat feeble; and so long as these peculiarities continue I steadily pursue the course already laid down, and in numbers of cases I have done so for four or five hours in succession, when at the end of that time, if the animal was not relieved, the pulse continued equally rapid, but stronger and harder, associated with a fretful, irritable state of the patient; I remove the hot water rugs, have the patient well scraped; and if after ten or fifteen minutes I find matters to remain as they were, I bleed without further delay. The quantity of blood to abstract will depend upon the change produced in the action of the artery. I allow the blood to flow until the beating of the pulse is softer and fuller. The body is next clothed with light but comfortable clothing, and I proceed to administer a Sedative. The one I usually choose for this purpose is the Tincture of Opium. The size of the dose will depend upon the size and breed of the patient; I rarely, however, under the circumstances, give less than three ounces by measure, or to very large-sized horses, more than four ounces for a dose. The effects which generally succeed are marvellous; the patient speedily becomes quiet, the surface of the skin becomes dry, and the animal lies down and remains at rest for hours in succession.

“Should this state of repose supervene, every attention should be given to the warmth of the patient. To allow the temperature of the body to fall considerably might prove destructive to the life of the animal. The veterinary attendant ought therefore to look well to this matter.

“PURGATIVES.—I very rarely give purgatives to animals affected with Enteritis, unless the disease arises from the patient having partaken of short sour grass, or food of that character. In cases of this kind a purgative is necessary to rid the intestines of what otherwise, in all probability, would prove a continuous cause of the malady. A purgative will irritate the bowels; and living tissues, when inflamed, should have rest—rest being one of the primary conditions of cure.”

One selection more and we have done. And here we will extract the details given by the author respecting the agents he employs.

PNEUMONIA.—“The best remedies in general, are Aconite 1, Bryonia 1, Phosphorus 2, Bromine 2, Aromatic Ammonia, and Blistering the sides with mustard.

“ACONITE 1.—At the commencement of the disease, Aconite and Blisters to the sides should constitute the principal medical treatment of the case. Give the Aconite in 2-drachm doses of the first dilution,

mixed with six or eight ounces of water, every three or four hours, for three or four days in succession; unless the more violent symptoms should abate, in which case the medicine should be reduced to about three doses per day.

“BLISTERS.—The application of mustard blisters to the sides of the chest is essentially necessary. They should be rubbed over a large extent of surface, and freely and repeatedly applied until the skin and subtissues become distended with serum.

* * * * *

“BRYONIA 1.—Bryonia is another excellent remedy to use at the commencement of Pneumonia. Use it in 2-drachm doses of the first dilution in three or four ounces of water each time. It may either be given alone or in alternation with Aconite.

“PHOSPHORUS 2.—Phosphorus is a remedy of great value in Pneumonia; care, however, is necessary in using it; if given in too large doses, it appears to favour hepatization of the lung. The proper time to give it is when the disease is fully established. It may either be administered alone or in association with Bryonia. Give it in 2-drachm doses of the second, or even for delicate horses, of the third dilution, mixed with three or four ounces of water.

“AROMATIC ANMONIA.—This is a remedy which the practitioner may find necessary at almost every stage of the disease. The proper dose to give will depend upon the breed, size, and vital condition of the patient.”

While, as we have confessed, we do not agree with the *treatment* of diseases as advocated by Mr. Haycock, there is a good deal in their *general symptoms and characters* as described by him that meets with our approval, and particularly do we commend the plan adopted by him of placing the *pathognomonic signs* of the malady in italics. Again, in the rules laid down by him for the selection of drugs, and their exhibition in disease, there is much which we agree with.

“I.—GENUINENESS OF DRUGS.—The superintendent of a case of disease should possess a moral certainty that the remedy he may resort to is genuine; without the drug be genuine he must expect the result either to be *nil* or in the highest degree doubtful.

“II.—SIMPLE MEDICINES.—Keep to simple medicines. One of the greatest evils in veterinary practice is that of mixing a number of drugs together, and giving the same in a mass. *The more simple our practice, the more certain our results.* This may be set down as an axiom in the treatment of disease. By noting well the state of our patient, and by the administration of a simple medicine, we are in a condition to accurately watch its effects should a change either for better or worse supervene; but, if compound medicines are used, and one or other of such changes should occur, we may attribute it to the action of the medicines, but we should be at a loss to know to which of the ingredients it was due; so that, if no other advantage arises from the giving of a single medicament, that of certainty to the mind of the attendant as to which is the curative or disturbing agent, is to be regarded as a solid advance in the right direction.*

* “Lest what I write be misconstrued, I will further explain what I mean by the term simple medicine. Many vegetable medicines consist

“III.—REMEDIES.—If a remedy does not act at once, the attendant should not despair. Some diseases do not yield until the remedy has been given several times in succession. If the attendant is satisfied, however, that he has taken every precaution in accurately diagnosing the disease, and in selecting the appropriate remedy, he must persevere in its administration; and success in most instances where cure is possible will reward his perseverance. In chronic diseases a beneficial result can seldom be observed for several days, or even longer; while in acute diseases, as in inflammation of the bowels, relief is sometimes speedily obtained. Where, however, a beneficial result is not obtained in acute and sub-acute maladies in the course of six or eight hours, the symptoms must again be carefully gone over, and a new remedy selected, which must be given either alone or in alternation with the old one, and its use steadily persevered in.

“IV.—AMENDMENT OF PATIENT.—If a remedy be administered to a diseased patient, and amendment follows, which is sudden, or slow, as the case may be, but nevertheless well marked, either give the remedy less frequently or in less quantity, or do both: which of the three courses to adopt will depend upon the judicious management of the attendant. It not unfrequently happens, however, that the following will take place:—The patient will improve to a certain degree, when the improvement will stop. In all such cases the patient must again be examined with every care, and another and more appropriate remedy selected.

“V.—REPETITION OF MEDICINES.—The repetition of medicines will depend upon a variety of circumstances, respecting which no definite rule can be laid down. In very acute cases it may be necessary to repeat the medicine every ten or fifteen minutes; in sub-acute diseases every hour, or every four hours, or every twelve hours, as the case may be; while in chronic diseases an interval of twenty-four hours may be allowed to elapse between its repetition. This, like many other things of a similar nature, will depend upon the experience and judgment of the attendant. I say to him, however, give the medicine time,—let him learn to wait for its effects.

“VI.—MEDICINE IN CHRONIC DISEASE.—In all cases of a chronic nature, administer the remedies to the patients after they have fasted for some time; then let them remain without food for a short time.

Thus we close our review of Mr. Haycock's work. While we have not given to it, and cannot, our unqualified approval, for reasons assigned, yet do we think that there is much in it that will well repay an attentive perusal.

We had marked several other sections for comment, but want of space prevents our entering upon them.

merely of spirits of wine and the juice of the plant whose name the medicine bears. Tincture of *nux vomica* is an example of the kind. Other medicines, again, are made by mixing two together. Tincture of the muriate of iron is an example of this nature; it is composed of iron and muriatic acid. But muriate of iron I class as a simple medicine; but if the tincture of *nux vomica* was mixed with the latter, I should call the result a compound medicine, and reject it accordingly. If it was necessary for a patient to have both, I should give them alternately, allowing intervals of some hours, or perhaps a day to intervene, between the giving of one medicine and the other.”

THE VETERINARIAN, DECEMBER 1, 1859.

Ne quid falsi dicere audeat, ne quid veri non audeat. —CICERO.

ALLEGED OUTBREAK OF PLEURO-PNEUMONIA IN AUSTRALIA.

OUR present number will be found to contain the unwelcome intelligence of the appearance in Australia of that fatal disease to cattle—pleuro-pneumonia—(see p. 702, *et seq*). Hitherto this thriving colony has been considered as being secure against the outbreak of this scourge, seeing that its native cattle were unaffected, and that it was placed at so great a distance from those parts of the world where the malady prevailed. Even the rapid communication which has been effected between it and the mother country, was thought to be incapable of mischief, in this particular, by the transmission of animals, as they would nevertheless be so long on the passage that their freedom from disease would be fully tested. Besides, the few cattle shipped from here could only consist of first-class animals, selected with the greatest care from our purest breeds, for none other could possibly prove remunerative to the importers. There appears to be still a great necessity to thoroughly investigate the laws which govern the spread of pleuro-pneumonia. Of its dire contagion, comparatively few doubters now exist among scientific practitioners; but of the commencement or ending of the power of its transmission, no one seems to be fully acquainted with. Throughout continental Europe, the sanitary laws applicable to this disease are remarkable for their stringency; and in Bavaria, the animals which survive the attack are branded on their horns, to prevent their being readily disposed of, it being thought that, from the partial disorganization of their lungs, which still exists, they are capable for many succeeding months of disseminating the *materies morbi*. That such may

probably be the case, receives some support from the way it is said that the malady has been introduced into Australia.

The particulars of this, together with the judicious means which have been promptly adopted to limit its extension, will be seen from the following observations of the Editor of the '*Melbourne Argus*,' who, in directing public attention to the subject, thus writes :

“Considering its importance, a very small number of stock-owners attended the meeting held for the purpose of receiving the report of a sub-committee appointed to make inquiries and collect information relative to the breaking out of that terrible scourge of cattle, pleuro-pneumonia, the ravages of which in the old country have ruined so many farmers.

“That the disease does exist, and in an aggravated form, upon Mr. Boadle's farm, there can be no possible question. The evidence, both lay and professional, upon the point, to say nothing of the specimens of morbid anatomy exhibited, was sufficient to convince the most sceptical of the identity of the affection with the dreaded pleuro-pneumonia. The common danger has made farmers unanimous in determining upon the immediate eradication of the plague. Mr. Boadle's cattle are to be destroyed at once, the proprietor being reimbursed by a committee appointed to collect the necessary subscriptions. It is satisfactory to know that the disease is, as yet, purely local ; but if it be true that a milk-maid going 'to place' from where the disease was present to an uninfected farm carried the malady with her, it will be seen that the most prompt measures can hardly be expeditious enough to prevent its spread.

“A single imported cow brought the plague with her from England, and now a herd of fifty-one are more or less affected. A post-and-rail fence alone divides Mr. Boadle's from his neighbour's farm, upon which a large quantity of stock are depasturing ; and it is to Mr. Boadle's praiseworthy exertions in giving warning and taking precautionary measures, that the contiguous cattle enjoy immunity from disease. At the meeting it was suggested that no imported cattle should be

permitted to be landed, unless a certificate of health were produced on behalf of, or by the proprietors, a competent inspector being appointed to carry out the provisions of any law which might be made on the subject."

We confess to feeling a deep interest in this matter, and to await with anxiety the next reports from the colony. If the statements now put forth are fully confirmed with reference to the cause of the appearance of the malady, we regard them as furnishing important data to the right understanding of its contagiousness, as well as for safe legislation on the means of its prevention. Here, however, we must leave the subject for the present.

VETERINARY MEDICAL ASSOCIATION.

ACTING SECRETARY'S REPORT OF THE PROCEEDINGS OF THE VETERINARY MEDICAL ASSOCIATION FOR THE SESSION 1858-9.

GENTLEMEN,—The close of another session renders it necessary that I should lay before you a report of the proceedings of the Association during the past year, and it affords me much satisfaction that, in so doing, I am enabled to congratulate the members upon its continued prosperity and usefulness.

A greater number of new members have been elected during the session than for several previous years, and the essays which have been read have contained an equal amount of valuable information. The discussions, which assuredly are not the least important part of the proceedings of the Association, have proved the determination of the members to sift, as thoroughly as was possible, the matter before them, so as to arrive at the best practical results. As, however, no very lengthy comments are needed in a report of this kind, I shall, in place thereof, proceed to narrate the subjects which have occupied the attention of the society since its first assembling in October last.

At the first meeting of the session, Messrs. J. K. Haire, M. Hack, T. J. Lang, J. Martin, A. H. Santy, and W. R. Stanley, were elected as vice-presidents; and I had the honour also of being re-elected as your acting secretary.

Subsequently, Mr. J. M. Axe was elected a vice-president in the place of Mr. Stanley, who had obtained his diploma.

At the meeting immediately following these proceedings,

Mr. C. Hewson read the essay on the 'Anatomy and Physiology of the Skin and its Appendages,' to which had been awarded the prize medal. Subsequently, ten other essays were read and discussed in succession, viz. :

Mr. W. Wilson, on 'Pleuro-pneumonia in Oxen.'

Mr. M. Hack, on 'Pnuemonia in the Horse.'

Mr. T. Lang, on the 'Anatomy of the Foot, and Laminitis.

Mr. A. H. Santy, on 'Parturient Apoplexy.'

Mr. A. Bickford, on the 'Anatomy, Physiology, and Pathology of the Eye.'

Mr. J. Martin, on 'Tetanus.'

Mr. C. S. Hirst, on 'Roaring, illustrated by Morbid Parts.'

Mr. H. Noakes, on 'Hæmatosepsis.'

Mr. P. Gadd, on the 'Anatomy, Physiology of the Brain, and Phrenitis.'

And one on 'Secretion, and some modifications of that process,' by myself, as your acting secretary.

In addition to these essays, an evening was devoted to the discussion of a case of 'Hydrothorax in a Horse,' reported in the *Veterinarian*, by *Mr. Holmes*, *M.R.C.V.S.* The question, also, of the *modus operandi* of firing, was brought before us by *Mr. Haire*; and that of the infectious nature of glanders and strangles, by *Mr. Hack*.

The history of a case of disease in a horse, which very much resembled that known as black-quarter in cattle, was communicated by *Mr. Stanley*, *M.R.C.V.S.*, of Leamington, and read to the meeting by *Mr. W. R. Stanley*.

The following morbid specimens have likewise been received :

From *Mr. C. Marson*, *M.R.C.V.S.*, the head of the femur and acetabulum of a horse, both extensively diseased.

From *Mr. Gowing*, *M.R.C.V.S.*, the single colon of a horse which was ruptured in several places.

From *Mr. Woodger*, *M.R.C.V.S.*, a specimen of intersusception of the ileum, caused by a tumour *within* the intestine.

The above specimens were accompanied with the history of the respective cases in which the lesions occurred.

Besides these, *Mr. Hirst* laid before the members several morbid specimens illustrative of his essay on roaring. *Mr. Noakes*, also, produced some scrofulous tumours taken from a dog, accompanied with the history of the case, as furnished by *Mr. Gregory*, *M.R.C.V.S.*; and *Mr. J. Martin* exhibited a very large triple-phosphate calculus, and gave an account of the symptoms which were observed during the illness of the animal.

A truss to be used in the diseases "bog-spavin" and

“thoroughpin,” was exhibited by *Mr. Axe*, who stated that he had employed it with considerable success.

In speaking of the new members which have been elected, it behoves me, in the first place, to mention that Mr. Assistant-Professor Varnell has been chosen an Honorary Associate, and I am sure I am only giving expression to the sentiments of the entire body when I say, that no name could more worthily be added to those of the distinguished individuals who compose that list.

During the session, twenty-nine new members have been elected, but as one of these neglected to pay his subscription, his election became necessarily void, thus making the total number twenty-eight.

The above particulars embrace, I believe, all matters connected with the business of the past session which are necessary to be reported, and as such, it remains only to be stated in conclusion, that, as many of us are likely soon to be scattered over different parts of the country, we still remember that we are members of the Veterinary Medical Association, and that we endeavour by every means within our power to aid those who shall succeed to our vacant places. For myself I trust that I may be allowed to express a hope, that so long as the College exists, there will remain as one of its branches of education a Veterinary Medical Association, in which the pupils may freely discuss all matters connected with the art they are to practise; and that a long line of acting secretaries may follow me in the performance of the pleasing duty of presenting, year by year, an epitome of their exertions in the cause of science.

REPORT OF THE COUNCIL FOR THE TWENTY-FOURTH
SESSION, 1859-60.

The Council of the Veterinary Medical Association held their meeting in the board room of the College on the evening of October the 6th.

Assistant-Professor VARNELL in the Chair.

PRESENT: Messrs. J. C. Broad, H. T. Batt, H. R. Stevens, J. Woodger, and Professor W. J. T. Morton.

The minutes of the meeting held October 8th, 1858, were read and confirmed.

The accounts were audited and found correct. The balance on the past session in favour of the Association was £9 18s. 10d., which, added to the balance in the treasurer's hands, gave a total balance of £57 9s. 2d.

The acting secretary's report for the past session was also read, and approved of.

Mr. Corby, the acting secretary, having left the College since the last meeting, it was unanimously resolved, on the motion of Professor Morton, seconded by Assistant-Professor Varnell—

“That the thanks of the Council be given to him for the earnestness and zeal he had manifested during the entire period he acted as secretary to the Association, and that this expression of the wishes of the Council be emblazoned on vellum, and forwarded to him in America.”

The honorary secretary next laid before the meeting a letter he had received from Mr. Bray, V.S., of Ulverstone, with the reply he had given to it.

The Council approved of what the honorary secretary had done, and considered it not desirable that any further notice should be taken of the matter.

The librarian reported that he had recently examined the state of the library, and found it to contain above 1200 volumes, in fair condition.

On the motion of Assistant-Professor Varnell, seconded by Mr. Broad, several new works were directed to be added to the library.

It was then moved by the honorary secretary, seconded by Mr. Batt, and carried—

“That 150 copies of the rules, &c., of the Association, with the catalogue of the books of the library, be printed.”

A committee, consisting of Messrs. Broad, Batt, and Woodger, having read the essays discussed during the last session, with the view to the selection of those meriting the thanks of the Association, reported that they considered the following to be deserving of this distinction:

Mr. H. Corby, on ‘Secretion.’

Mr. Hack, on ‘Pneumonia.’

Mr. Gadd, on ‘The Anatomy and Physiology of the Brain and Phrenitis.

Mr. Hirst, on ‘Roaring’

Mr. Beckford, on ‘The Anatomy and Physiology of the Eye.’

Mr. Wilson, on ‘Pleuro-pneumonia,’ and

Mr. Noakes, on ‘Hæmatosepsis.’

Moved by Assistant-Professor Varnell, and seconded by Professor Morton, and carried—

“That the report of the committee of selection be adopted, and the thanks of the Council be given them for their services.”

A wish having been expressed by the Council that some mode be adopted to distinguish those essays that are of greater worth than others, and with especial reference to the one introduced by Mr. Corby, on ‘Secretion,’ it was sug-

gested that, at the request of the Council, it should be published in the '*Veterinarian*.'

The committee also expressed their approval of the essays discussed during the last session, as a whole; and further, that they had found some difficulty in making their selections, when all were so good.

The honorary secretary reported that two prize essays had been received from students, which, having been read, it was found that by both their authors all but a total description of the nerves of the heart had been omitted, whereupon it was resolved that the prize be withheld.

Further resolved, that the same subject, viz.:

'The Descriptive Anatomy of the Heart of the Horse, Ox, Sheep, Pig, and Dog,' be continued for the coming session, and that leave be given to the authors of the essays, whose names are unknown to the Council, to supply the omission.

The anatomical preparation of 'The Sympathetic Nerves of the entire body,' was placed before the Council, which, having been examined, was deemed by them to merit the silver medal.

Upon opening the envelope, the dissector was ascertained to be *Mr. J. H. Stickney*.

Resolved, "That the anatomical preparation for the session be one, showing the distribution of the pneumogastric, superior laryngeal, and recurrent nerves of an adult subject, as far down as the diaphragm, which organ may be left entire."

One third of the Council having retired, in accordance with the rules—

Mr. Batt was re-elected, and Mr. Lowe added.

On the motion of Mr. Stevens, seconded by Mr. Broad, the president, treasurer, honorary secretary, and librarian, were unanimously re-elected.

On the motion of Mr. Batt, seconded by Mr. Woodger, the thanks of the Council were given to Assistant-Professor Varnell, for his urbane conduct in the chair, which, being duly acknowledged by him, the meeting broke up.

W. J. T. MORTON,

Honorary Secretary.

OBITUARY.

WE have to record the death of Mr. Walter Scott Butler, M.R.C.V.S., Brecon, from that destructive disease, phthisis. Mr. Butler obtained his diploma, Jan. 23d, 1839, and entered into practice at Kington, Hereford, where his professional conduct won for him the respect and confidence of his employers.

INDEX.

A.

- Acarus scabiei, the origin and effects of, 700
- Abscess, with hypertrophy of the kidney, case of, 419
- Acid, carbonic, effect of, on the skin, 144
- Agricultural Society, Royal, report of the awards of the, 513
 - report of, 55
- America, the state of veterinary medicine in, 502
- "Amicus," his observations on the opening of the session at the Royal Veterinary College, 671
- Ammonia, a new source of, 461
- Anæsthesia produced by electricity, 140
- Anæsthetics, action of, 36
 - new, local, 267
- Anatomy, the study of, too much time devoted to, 165
 - importance of, 245
- Anderson, J., records a case of strangulation of the ilium of a horse, and lumbrici in the stomach, 258
- Animal life, persistent types of, 508
- Antiseptic, a new one, 36
- Apoplexy, causes of, 19, 20
 - case of, in a heifer, 572
 - cases of, successfully treated with strychnia, 138
- Armatage, G., his case of symptomatic disease of the brain of a cow, 314
- Army appointments, 58, 120, 240, 488, 552
 - veterinary surgeons, new warrant respecting, 607
 - observations on the appointment of, 639
- Arsenic, on the poisoning of some calves by, 185
 - its presence in artificial manures, and absorption by plants, 657, 710
 - its employment in the arts, 456, 663
- Artificial production of organic compounds, 1
- Ascarides, removal of, 576
 - by enemata of the nitrate of silver, 700
- Asphyxia, results of, by M. Séquard, 454
- Austin, J., records a case of calculus taken from the cæcum of a horse, 571
- Australia, the introduction of European animals into, 209
 - diseases among stock in, 403
 - appearance of pleuro-pneumonia among the cattle of, 702

B:

- Bailey, E., records a case of rumenotomy, 249
 R., advocates the use of setons in stomach staggers, 450
 records a case of twisted colon, 450
- Basse, M. L., on the castration of horses in Russia, 39
- Bastick, Mr., on new pharmaceutical preparations, 149
- Bee story, a, 675, 669
- Bees'-wax, its culture and value, in Russia, 212
- Bell, Jacob, obituary of, 491
- Belladonna and iodine in mammitis, 454
- Bernard, C., on the variation of colour in venous blood, 142
- Beulzen, M., on the poisonous state of the flesh of animals, resulting from the use of veratrum album, 100
- Bickford, A., records a case of three strongyles found in the kidney of a dog, 312
- Blood, venous, red colour of, 41
 its analysis in hydrophobia, 200
 its physical properties when charged with different gases, 206
 quantity of, in a horse, 266
 variations in colour of, 142
- Boddington G., his remarks on entozoa, 375
 on soundness and unsoundness, 563
- Bone, observations and experiments on the artificial production of, 511
- Botany, as applied to veterinary medicine, 29, 133, 258, 358, 497 644
- Bots, found adhering to the fauces of a foal, 643
- Boussingault, M., on the action of carbonic acid on the skin, 144
- Bowles, R., records a case of hydrophobia, caused by the bite of a cat, 147
- Brain, collections of pus in, 19
 extensive disease of, 65
 hæmorrhage on the periphery of, 19
 inflammation, symptoms of, 18
 singular disease of, in a sheep, 505
 symptomatic disease of, in a cow, 314
 tumour in ventricle of, 12, 61
- Bray, W. D., records a case of the successful use of strychnia in nervous and muscular apoplexy, 138
- Bright, Dr., obituary of, 60
- Brown-Séguard, M. E., on the physiological properties of the blood, 206
- Brussels Academy of Medicine, prizes offered by, 316
- Butson v. Badcock, disease of lungs, 358
- Butler, W. S., obituary of, 730

C.

- Calculi in the bladder of female domesticated animals, 99
 of ruminants, 102
 in the intestines of horses, 266, 267
- Calculus, urethral, a case of, in a foal ten weeks old, 495
 extraordinary large one, from a horse, 571
 in a mare, case of, 452, 571
- Calley, A., records a case of death from difficult parturition, 649

- Camps, W., *M.D.*, remarks on epilepsy in the horse, 181
- Canker of the foot, remarks on, 713
- Carbonate of lime, new test for, 453
- Carbonic acid, effects of on the skin, 144
- Carpus, cases of fracture of the bones of the, 494, 639
- Carput, Mons. Vanden, on the poison developed in meats and sausages, 488, 520
- Cartledge, B., records a case of casting off the hoof from the leg being strapped up to subdue viciousness, 493
- Castration, as practised in Russia, 39
by scraping asunder the vessels, 72
- Cattle poisoned by paint, 665
disease in Russia, 574
plague, report on the, 93, 328
poisoned by yew, 652, 685, 697
remarks on the rearing of, 513
- Caussé, M., records a case of effusion on the spinal marrow of a horse, 467
- Caustic lint, form for making, 38
- Cell-formation in vegetables, 273
in animals, 275
- Cervical vertebræ, supposed dislocation of the, 189
- Charbon in pigs, by M. Willems, 416
- Chinese sugar-cane, account of, 154, 454
their supposed word of all excellence, 336
- Chlorate of potash, therapeutic action of, 578
- Chlorine, action of as a solvent for gold, 580
as a bleacher, 580
- Chloroform, how it kills, 36
means to mitigate its effects, 508
on the use of, 581
relative advantages of, 462
- Choking, clinical observations on a case of, 666
- Cholesterine, its accumulation in the brain, 63
- Coleman, Professor, a proposal to erect a monument to his memory, by "Sinceritas," 306
- Colic, spasmodic, causing a rupture of the colon, 27
- Colon, rupture of, in a pony from eating the intestines of an ox, 69
from puncture of a pin, 136
comments on, 192
cases of perforation of the, 447
case of twisting of the, 450
- Congestion, by M. S. Verheyen, 159, 281, 343
- Contraction of the feet, M. Lafosse's remarks on, 528
- Copeman, Professor A. S., on the production and sources of animal heat, 83
on the wonders of the microscope, 27, 319
- Copp, Mons., his case of nasal polypus in a horse, 339
- Copper, poisonous effects of the salts of, with organic bases, 317
- Corby, Mr. H., presentation of testimonial to, 425
- Cornelius, J. E., records a case of poisoning a filly by yew, 697
- Cotton-cake, the nutritive value of, 201, 322
- Cow, a case of one producing five calves, 200
case of rumenotomy in a, 249
difficult parturition in a, 527
an aged, 668
- Cox, Messrs., on the poisoning of some calves by arsenic, 185

- Entozoa, on, 375
 located in the abdomen, case of, 695
 researches on their development, 700
 Epidemic of 1858-9, observations on the, 310
 Epidemics, regulations respecting, in France, 701
 Epilepsy in the horse, case of, 22, 181
 Ergot, on, 367
 Ergotized grasses, existence of, 574
 Ernes, W., his translations of foreign veterinary journals, 39, 99, 157, 213, 277, 337, 416, 464, 527, 591, 666, 712
 Erratum respecting Mr. J. Dollar's examination as an M.R.C.V.S., 240
 Ether, advantages of as an anæsthetic, 462
 Etiquette, hints on, 304

F.

- Falck, M., on the poisonous effects of the salts of copper having organic bases, 317
 Fear, death of a horse from, 263
 Feet, on contraction of the, 528
 "Fiat Justitia," on the title of veterinary surgeon, 305
 Fibrine, formation of, 142
 Field, J., his appointment to the Indian army, 120
 Figuer, M. L., on sugar not being formed in the liver after death, 151
 Fleming, G., records a case of puncture of the colon by a pin, causing the death of a horse, 136
 comments on ditto, by W. Lewis, 192
 of scarlatina anginosa, 254
 Flesh of animals, the poisonous effects of, produced by the veratrum album, 100
 Flexor tendons, remarks on sprain of the, 712
 Flourens, on animals, 510
 Foal, affected with a double scrotal hernia, 102
 death of a, from "bots" adhering to the fauces, 643
 Food, the flesh of the eland suited for, 82
 animal, the consumption of in France, 199
 compressed, for horses, 577
 manufactured, for feeding cattle, remarks on, 87
 of plants, 523, 583, 653
 prize essay on, 81
 Forbes, M. B., records a case of remarkable fecundation in a cow, 200
 Fountain, Dr., on the chlorate of potash, 578
 Fracture of knee bones, 494, 639; pasterns, 641; cranium, 640; jaw, 640; spine, 641
 Fuller, A., records a case of malpresentation in a mare, followed by inversion of the uterus, 443

G.

- Gabriel, E. N., communication from, relating to omissions in the Register, 167
 Gastralgia, supposed case of, 596
 Gibton, R., on the present state of the veterinary profession, &c., 378
 Gierer, Herrn, M., his operation for a double scrotal hernia, 102

- Glanders, the using of a horse affected with in a public vehicle, 57, 73, 105, 108, 183, 193, 218
- Gluge, Professor, on the red colour of venous blood, 41
parasitic vegetation in animals, 213
- Glycerine, iodized, in diseases of the skin, 391
a preservative of morbid parts, 392
- Good descent, 318
- Goodwin, W. J., on the appointment of army veterinary surgeons, 639
- Goude, J. M., on disease of the brain in a sheep, 505
- Gowing, J., records the death of a pony from eating the intestines of an ox, 69
- Grains of truth, 336
- Grasses, nutritive properties of, 369
ergotized, 574
- Greaves, T., Thoughts in the sick box, 687
- Gregory, T., records cases of poisoning of pigs with common salt, 251
- Gunther, Professor, obituary of, 180

H.

- Hæmorrhage on the brain, symptoms of, 19
- Hall, J. B., on influenza in horses, 568
- Hardy, M., on encephalo-arachnoiditis, 527
- Harvey, Dr., proposed statue to, 265
- Hassell, Dr., on the use of arsenic in paper-hangings, &c., 663
- Hawes, R., records a case of rupture of the diaphragm, 186
- Hawthorn, J., records a case of parotiditis; ditto of the sole of a shoe fixed on the molars of a cow; and one of the larva of the gad-fly under the skin, 433
- Headland, Dr., on the cumulation and toleration of medicines, 82
- Heat, animal, its production and sources, 83
- Heart, singular disease of, in a cow, 308
- Henderson, Charles, obituary of, 120
tablet to the memory of, 559, 610
John, records a case of fractured carpus of a mare, 494
- Hernia, scrotal, operation for a case of double, 102
abdominal, remarks on, 713
- Hobbs, Dr., on the oil of the dugong, 459
- Hock-joint, ulcerative disease of, 253
- Holmes, G., records a successful case of hydrothorax, 25
- Hoof, loss of the entire, from buckling up the leg, 493
- Horses, statistics relating to, 81
longevity of, 391
remount, for India, purchase of, 127
- Hubbick, W., obituary of, 180
- Hudson, J., obituary of, 492
- Hunt, R., his observations on the epidemic of 1858-9, 310
- Hunter, John, re-interment of remains of, 264
- Hurford, T., 12th Lancers, records several cases of fracture and dislocations, 639
- Huxley, Professor, on persistent types of animal life, 508
- Hydrophobia, case of, caused by bite of a cat, 147
condition of the blood in, 200
case of, in a dog, 463
treatment of, 574, 575
nature of the poison of, 576

Hydrothorax, case of, in a horse, successfully treated, 25
 Hypertrophy of the heart of a horse, case of, 417

I.

Ilium, strangulation of, 263
 Impetigo, ointment to allay irritation of, 141
 Indian hemp, action of, 375
 Influenza in horses, on, 568
 Inoculation for distemper in cattle, 58
 with diphtheritic exudation, 80
 Introductory lecture at the opening of the session at the Royal Veterinary
 College, 613
 Iodide of sodium, action of, 406
 Iodine and belladonna in mammitis, 454
 Iodized glycerine in skin-diseases, 391
 Iron, sulphate of, value of, as an anthelmintic, 378

J.

Jaw, a case of fracture of the lower, 640
 Jurisprudence, Veterinary, 57, 108, 110, 114, 117, 173, 223, 291, 358,
 428, 479, 482, 547, 551, 611, 612, 672

K.

Kensington, E. S., his remarks on the absorption of arsenic by plants, 710
 Kettle, B., records an instance of calves being poisoned by the rhododendron
 hybridum, 435
 Kidney, case of hypertrophy of, 419
 Knee-joint, a case of fracture of, during progression, 493
 from falling, 639
 Koussou, the active principle of, 200

L.

Lafosse, M., on idiopathic emphysema, 277
 contraction of the feet, 528
 Lameness, intermittent, caused by the obliteration of the iliac artery, 591
 Lane, J. H., obituary of, 432
 Languages of animals, 451
 Larva of the *œstrus equi* under the skin, 433
 Lawes, J. B., his remarks on manufactured food for feeding cattle, 87
 Leaders. Annual address of the editors, 45
 The science of botany as applied to veterinary medicine, 52
 The using a glandered horse in a public vehicle, 105, 218
 On some of the cases in the journal, 167
 Professor Spooner's appointment as an examiner of horses at the
 meeting of the Royal Agricultural Society, 218
 Professional etiquette, 218
 Importance of co-operation, 286
 The fifteenth annual meeting of the profession, 345
 On the title of veterinary surgeon, 346
 On a proposed monument to Coleman, 348

- Leaders. On the report of the rhinder-pest, 422
 On poisoning by yew, 423
 On lectures delivered by members of the profession, 473
 The new army warrant relating to veterinary surgeons, 531
 The Warwick meeting of the Royal Agricultural Society, 531, 603
 Tablet to the memory of Mr. C. Henderson, 610
 Opening of the session at the Royal Veterinary College, 669
 The alleged outbreak of pleuro-pneumonia in Australia, 724
 Lecture, the introductory, at the Royal Veterinary College, 613
 Leg, supernumerary, removal of, 7
 Lepper, H., records a case of singular disease of the heart of a cow, 308
 Lewis, W., his comments on Mr. Fleming's case of ruptured colon, 192
 Life, remarks on persistent types of animal, 508
 what constitutes it? 163
 Limb, hind, of a mare, affected with a singular disease, 315
 Limbrich, J., obituary of, 612
 Lint, caustic, 38
 Lithotomy in the horse, case of, 434
 Liver, on the production of sugar by the, 507
 disease of, in sheep, 565
 Loaf, how to make out of a deal board, 6
 Longman, J., records cases of typhus fever in the horse, 437
 Lucas, Joseph, obituary of, 368
 Lumbrici in the stomach of a horse, 261
 intestines, in great numbers, 375
 Lungs, obscure disease of, 33
 Lymphatics, remarks on inflammation of, 667

M.

- McCall, Mr., presentation of a testimonial to, 248
 Malpresentation in a mare, cases of, 157, 443, 649
 Mammalia, recent and fossil, 394
 Mammitis, use of iodine and belladonna in, 454
 Man, the right, in the right place, 367.
 Marasmus in a mare, case of, 388
 Marcorps, M., on dartre furfuracée, 158
 Marty, M., records a case of difficult parturition in a mare, 157
 "Master Butterfly," an account of his death, 699
 Mather, G., records a singular case of death of a foal from "bots" adhering to the fauces, 643
 Mavor, W., his letter on Mr. Dollar's conduct respecting a glandered horse, 184
 Maxilla, posterior, case of fracture of, 640
 Mazurkiewicz, M. Vincent, an account of his 'Veterinary Annual,' 216
 Meats and sausages, observations on the poison developed in, 488, 520
 Medicine, Academy of, prizes offered by, at Brussels, 316
 Medicines, their cumulation and toleration, 82
 Metallic sutures, value of, 35
 needle for, 577
 bodies swallowed with their food, by ruminants, 583
 Metcorization in sheep, remarkable instance of, 421
 Meyrick, James, records the death of a colt from worms in the abdomen, 695
 Microscope, the wonders of, 272, 319
 Milk, medicinal, 392

- Morphia, sulphate, parturient effects of, 454, 652
 Mosley, his singular case of diseased limb of a mare, 315
 Mules, the castration of, for vice, 72, 120
 Murray, J. J., his list of cases of pointed metallic bodies swallowed by ruminants, 583
 Muscular fibre, disintegration of, 264
 increase of, 590
 Mylabris, value of, 34

N.

- Narcotine, its effects on animals, 396
 Narcotism, voltaic, 140, 271
 Natural result, a, 318
 Needle for wire sutures, 577
 Nervous system, function of, 165

O.

- Obituary of Mr. George Watts, 59
 Dr. Bright, 59
 J. Williamson, 59
 Charles Henderson, 120
 G. Dale, 180
 Professor Gunther, 180
 W. Hubbick, 180
 Joseph Lucas, 268
 J. H. Lane, 432
 J. Bell, 491
 J. Hudson, 492
 J. Western, 552
 J. Limbrick, 612
 M. Cumming, 676
 W. S. Butler, 730
 Oil of the dugong, a substitute for cod-liver oil, 459
 Ollier, M., his experiments on the artificial production of bone, 511
 Ophthalmia produced by arsenical papers, 456
 Organic compounds, artificial production of, 1
 Ovarian tumour in a mare, 642
 Owen, Professor, his description of Eland meat as an article of food, 82
 on recent and fossil mammalia, 394
 Owles, A. J., on the use of the trephine in disease of the sinuses of the head, 382
 presents a specimen of filaria oculi, 385
 records cases of perforation of the colon, 447

P.

- Paint, cattle destroyed by eating, 665
 Parasitic vegetation in living animals, 213
 Parasitical disease of fowls transmissible to animals, 701
 Parotiditis in a calf, case of, 433
 Parry v. Edwards, chronic disease of the lungs of a cow, 672
 Parturition, death of a mare from a difficult case of, 649

- Parturition, difficult cases of, in a mare, 157
cow, 527
- Past, the, and the future, 300
- Pastern bone, transverse fracture of, 132
cases of fracture of, 641
- Patella, on dislocation of, 641
- Paton, J., records numerous cases of castration of mules for vice, 72
- Pavy, Dr., on the production of sugar by the liver, 507
- Percivall, C., records a case of obscure disease of the lungs, complicated
with spinal disease, 33
on the mylabris cichorii, 34
- Petry, Mons., on the efficacy of setons, 337
- Pharmaceutical preparations, new, 149
- Philadelphia, inauguration of the veterinary college at, 145
- Pigs, poisoning of, with common salt, 124, 251, 268
by drinking sheep-dipping mixture, 510
- Pindell, his statement that fat is an antidote to strychnia, 141
- Plants, the food of, 523, 585, 653
- Pleuro-pneumonia, the use of valerianic acid in, 647
its appearance in Australia,
- Poisons, permanence of, 393
- Poisoning of sheep by sucking their wool after dipping, 509
- Pony, a carnivorous one, 69
- Poppy, red, productive of meteorization in sheep, 421
- Potash, chlorate, action of, 578
- Pouchet, M., on dust in the air, 317
- Prentice, R., records a case of apoplexy in a heifer, 572
- Pritchard, R., records a case of tumour in the lateral ventricle of a horse, 12
epilepsy in a horse, 22
- Profession, the, estimation of, 127
- Progress of science, 602
- "Provincial" on the title of Veterinary Surgeon, 560
another, on ditto, 692
- Pumpkin seeds in cases of tape-worm, 81
- Pus within the brain, symptoms of, 19
- Pyatt, H., records a case of tumour in the ventricle of the brain, 61

R.

- Rearing of cattle, remarks on the, 513
- Rectum, case of laceration of, associated with an ovarian tumour, 642
- Red clover, productive of disease in sheep, 565
- Reports of the health of animals in the province of Brabant, 466
- Report of the Proceedings of the Veterinary Medical Association for 1858-9,
726
the council for 24th session, 1859-60, 728
- Review on "the relation of practical medicine to philosophical method and
popular opinion," 162
"the horse and his master," 469
"the form of the horse, as it lies open to the inspection of the
ordinary observer," 597
of 'The Gentleman's Stable Manual,' 715
- Rhododendron hybridum, calves poisoned by, 435
- Richardson, Dr., on voltaic narcotism, 140
- Rhinder-pest, report on the, 93, 328, 409

Robinson, W., records cases of poisoning pigs with salt, 124
 Rumensotomy in a cow, case of, 249
 Rupture of colon, cases of, 27, 69

S.

Salt, common, a poison to pigs, 124, 251
 Sausages and meats, remarks on the poison developed in, 488, 520
 Sayer, D., records a case of lithotomy in the horse, 434
 Scarlatina anginosa, case of, 254
 Sciences, the, classification of, 162
 progress of, 692
 Scruby, T. R., records a case of a tumour on the epiglottis of a foal, 446
 Séquard, M., on asphyxia in animals, 454
 on the formation of fibrine, 142
 Serous tumour on the epiglottis of a foal, 446
 Serres, M., on urinary calculi in ruminants, 102
 his observations on choking, 666
 on sprain of the flexor tendons, 712
 Setons, their efficacy in pleuro-pneumonia, 337
 uses of in stomach staggers, 450
 Sharman, J. B., records a case of urethral calculus in a foal, 495
 Sheep, a case of singular disease of the brain of, 505
 Sheep-dipping mixture, pigs poisoned by drinking, 510
 Sheep-poisoning by arsenical solution, 223, 268, 479
 sucking their fleeces after dipping, 509
 Shipley, W., records a case of tetanus in a heifer, 500
 Shoeing of horses that turn the toe outwards or inwards, 39
 Silver, acid nitrate of, as a caustic, 392
 nitrate of, in ascarides, 700
 Simonds, J. B., Professor, his report on the cattle plague, 93, 328, 409
 introductory lecture at the Royal Veterinary
 College, 613
 "Sinceritas," his proposition to erect a monument to the late Professor
 Coleman, 306
 Smale, P., on the disintegration of muscular fibre in "morbus Brightii,"
 259
 the use of valerianic acid in pleuro-pneumonia, 647
 Society for the prevention of cruelty to animals, 390, 450
 Sole of shoe on the molars of a cow, 433
 Sorgho, account of the, 154, 338, 454
 Soundness and unsoundness, 563
 Spinal-marrow, effusion on, 467
 Spine, case of fracture of, 641
 Stanley, F. T., records a case of poisoning by yew, 450
 Starch and sugar, equivalents of, in the food, 37
 Statistics of the number of horses, 81
 Stephenson, C., records a case of poisoning with yew, 381
 Strangulation of ilium, case of, 253
 Straub, M., on urinary calculi in female animals, 99
 Strongylus-gigas, three specimens of the, found in the kidney of a dog, 312
 Strychnia, successful use of in nervous and muscular apoplexy, 138
 action of, same as the wourara, 267
 antidote to poisoning by, 141
 Styptic, a new one, 701
 Sugar cane, Chinese, account of, 154, 454
 its value as food for cattle, 338

- Sugar in the blood, 455
 not formed in the liver after death, 151
 does the liver fabricate it? 507
 Superfœtation, remarkable case of supposed, in a mare, 419
 Sutures, metallic, value of, 35
 needle for, 577

T.

- Tablet to C. Henderson, at Saharunpore, 559
 Tape-worm, pumpkin seeds in cases of, 81
 Taylor, Dr., his report on pigs poisoned with salt, 126
 on the properties, &c., of nicotina, 396
 on ophthalmia produced by arsenical paper, 456
 Tenotomy successfully performed, instance of, 121
 how best performed, 553
 directions for performing, *woodcuts*, 677
 its ordinary results, 683
 Testimonial, presentation of, to Assistant-Professor Varnell, 241
 Mr. McCall, 248
 Mr. H. Corby, 425
 Tetanus, a case of, in a heifer, 500
 in a cow, case of, 418
 its transmissibility from animals to man, 317
 treatment of, by wourara, 577, 651
 a case in a mare supposed to depend on bots, 693
 Thayer, E. F., records a case of marasmus, 388
 Thierness, Professor, on the red colour of venous blood, 41
 Thoughts in the sick box, 687
 Thymus gland, uses of, 455
 Tibia, case of comminuted fracture of, in a horse, 130
 Time, importance of, 180
 Trachea of cow, effusion of lymph into the, 67
 Trephine, use of, in disease of the sinuses of the head, 42, 382
 Tumour in the ventricle of the brain, cases of, 12, 61, 65
 attached to the mucous coat of the intestines, 70
 on the epiglottis of a foal, 446
 Typhus fever in the horse, cases of, 437

U.

- Ure, Dr., on the use of iodide of sodium, 406
 Urethral calculus in a foal ten weeks old, 495
 Uterus, inversion of, 443, 464
 Uva ursi, a succedaneum for ergot of rye, 453

V.

- Valerianic acid, its use in pleuro-pneumonia, 647
 Van den Corput, his remarks on the poison of meats and sausages, 488, 520
 Varnell, G., Assistant-Professor, removes a supernumerary leg from a horse,
 woodcut, 7
 his comments on Mr. Pyatt's case of dis-
 eased brain, 61

- Varnell, G., Assistant-Professor, records a remarkable case of diseased brain, accompanied with an alteration of the bones of the skull, 65
 his letter in reply to Mr. Dollar, 77
 with enclosure from Mr. Mavor, 183
 records a case of tenotomy, 121
 presentation of a testimonial to, 241
 his description of a serous tumour on the epiglottis, 446
 on the operation of tenotomy, *woodcuts*, 553, 677
 his remarks on a case of death of a foal from "bots" adhering to the fauces, 643
- Venous blood, red colour of, 41
 changes in colour of, 142
- Veratrum album, its effects on animals, 100
- Verheyen, M. S., on congestion, 159, 281, 343
- Vermifuge, a new one, 318
 sulphate of iron, valuable as, 378
- Vertebræ, cervical, supposed dislocation of the, 189
- Veterinary, Annual, an account of, M. Vincent Mazurkiewicz's, 216
 College, inauguration of, at Philadelphia, 145
 jurisprudence. Using a glandered horse in a public vehicle, 57, 108
 Sale of glandered horses, *Russen v. Williamson*, 108
 Injury by collision, *Stubbins v. Knee*, 110
 Cruelty to a Pony, 114
 Ossification of the Cartilages, *Stanley v. Hulme*, 117
 Glanders, *Purves v. Bird*, 173
 Destruction of sheep by dipping, *Black v. Elliott*, 223, 479
 Ossified cartilage, *Hussey v. Coleman*, 291
 Chronic disease of mesentery, *Parrett v. Elliott*, 351
 Disease of the lungs, *Butson v. Badcock*, 358
 Poisoning of dogs with strychnine, 428
 Disease of hocks, *Withers v. White*, 479
 Farcy, *Menes v. Powell*, 482
 "A clever horse," *Cleobury v. Tattersall*, 547
 Unskillfulness and neglect, *Brown v. Clapp*, 611
 Broken back, *M'Master v. Anderson*, 612
 Chronic disease of lungs, *Parry v. Edwards*, 672
 medicine, its state and requirements, in America, 502
 Medical Association, Acting-Secretary's Report of proceedings for 1858-9, 726
 Report of the Council for 1859-60, 728
 profession, present state of, and causes that retard its advancement, 378
 reports, Belgian Government, resumé of, 593
 Surgeons, Royal College of, annual meeting of, 349

- Veterinary Surgeons, Royal College of, names of those who have obtained the diploma, 55, 356
 reports of the Council of, 172, 221, 289, 290, 355, 477, 611
 on the title of, by "Fiat Justitia," 305
 by "Provincial," 560
 by another "Provincial," 692
 new Army warrant relating to, 531, 603, 607
- Viciousness, loss of hoof from buckling up the leg to subdue, 493
- Voclcker, Professor, on the composition and nutritive value of cotton-cake, 201, 322
- Voltaic narcotism, 140, 271
- Vomiting, case of, in a foal, 596

W.

- Waller, Dr., on narcotism, 271
- Warrant, new, of the army veterinary surgeon, 607
- Warren, Dr., his styptic in internal hæmorrhages, 701
- Water, substitutes for, in the deserts of Africa, 59
- Watson, W., on botany, as applied to veterinary medicine, 29, 133, 258, 358, 497, 644
 on ergotized grasses, 574
- Watts, George, obituary of, 60
- Wentworth, G., on hepatitis in sheep, produced by red clover, 565
- West of Scotland, Veterinary Medical Association, report of, 426
- Western, James, obituary of, 552
- What we eat and drink, 488
- Wheatley, W. A., records a case of ovarian tumour, 642
- Why animals are enabled to see in the dark, 144
- Williamson, J., obituary of, 60
- Wire-sutures, needle for, 577
- Woodger, J., records a case of tumour attached to the mucous coat of the intestines, *woodcut*, 70
- Wood, Charles M., observations on the state of veterinary medicine in America, 502
- Woods, J. S., records a case of tetanus in a mare, 693
- Woods, Joseph, his account of the death of a donkey from the stinging of bees, 699
- Wordsworth, J. C., on the chloride of zinc as an escharotic, 196
- Work not worry, 276
- Worms, death of a colt from, 695
- Wourara, action of, the same as strychnia, 267
 in tetanus, 577, 651

Y.

- Yew, poisoning by, 267, 381, 423, 450, 652, 685, 697

Z.

- Zinc, chloride of, its use as an escharotic, 196

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